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Smart Computing®

In Plain English

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TROUBLESHOOTING TIPS

Resolve
SYSTEM CONFLICTS

The FAST & EASY Way

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Smart Computing

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Volume 18   .   March 2007   .   Issue 3

THIS MONTH'S COVER STORY:

Resolve
System Conflicts

News & Notes

We tell you the most common problems we're hearing about each month and provide straightforward solutions for each one.

Reviews

Our *Smart Computing* columnists spent some quality time with computer and computer-related hardware and software to get beyond the benchmark scores, statistics, and marketing hype. Find out what they liked and disliked about their choices.

Every PC needs an antivirus utility and drive maintenance tools. There are several system utility suites for users to choose from, but which one is best?

Our writers and editors select their favorite hardware. It's your one-stop shop for the latest and greatest.

**iPAQ rx5915
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March Web-Only Articles

Smart Computing subscribers may read the following articles at SmartComputing.com.

Hardware

For the best prices on the latest hardware, visit the Where To Buy area at SmartComputing.com (www.smartcomputing.com).

Quick Studies

Email
Explore Microsoft's
New Mail

Microsoft Access 2002
Use The Table Wizard To
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Microsoft Money 2006 Premium
Rascally Reconciliations

Adobe InDesign CS2
Flow Text Using Frames, Part I

Roxio PhotoSuite 7 Platinum
Troubleshoot DVD Builder

Security
Five Steps To Secure
Network Print Servers

Microsoft Works 2005
Create A Database
Report

Adobe Photoshop Elements
All About Layers

HTML
Relative Measurements Are Handy

Microsoft Excel 2002
Troubleshooting Formulas, Part I

Corel WordPerfect 11
Metadata Removal

Email

Adobe Photoshop Elements

Editor's Note

Conflict is a fact of life. Parents and kids, teachers and students, coworkers, bosses and subordinates, spouses, friends, siblings—why, even editors and writers occasionally come into conflict. Let's face it, it's an imperfect world, and even folks who are trying to get along and who really have one another's best interests at heart sometimes find points of contention. Best case, people communicate honestly and diplomatically, and the conflict is resolved; worst case, all communication comes to a screeching halt and *nothing* gets resolved.

Computers are like that, too, only worse.

Your computer is a complex collection of immature technologies: application software, operating systems, behind-the-scenes utilities and services, and a vast collection of input and output devices (and the device drivers upon which they rely), all of which are expected, *required*, in fact, to work together perfectly every time, all the time. Add to that the hardware that makes up your PC itself (motherboard, video card, audio card, memory, temperature monitors, fans, power supply, etc.), and you have some serious potential for conflict.

No one—not Microsoft, not Intel or AMD, not Symantec, not the clerk at Best Buy—can guarantee that all of these components will co-exist peacefully and productively. In fact, we can almost guarantee that, at some point, they will definitely *not* "play nice" together.

So, what can you do? Well, keeping everything up-to-date will certainly help. So will avoiding no-name software and hardware. So will installing as little "extra" hardware and software as possible. (After all, the fewer things you have going on, the less likely those things are to come into conflict.)

In the end though, there's no way to avoid it completely. When you cram that many complex technologies into one place and force them to work together, you *will* occasionally have problems—it's just the nature of the beast.

One thing you *can* do, though, is arm yourself with information. Knowledge, after all, is indeed power. So be sure to read through this issue of *Smart Computing*. We'll tell you what you need to know in order to minimize system conflicts, and what to do when, in spite of your best efforts, a conflict arises.

ROD SCHER, PUBLICATION EDITOR

Now Available On Newsstands . . .

Computer Power User * Give Your Rig Quad Power

We benchmarked Intel's quad-core monster, the Core 2 Extreme QX6700, on seven of the best motherboards and with five of the best RAM kits available; find out what parts will work best for your next build.

PC Today * Mobile Broadband

Mobile broadband is making it possible for notebook users to connect to the Internet from anywhere. This month's *PC Today* explains what mobile broadband is, what carriers offer it, and how the technologies differ.

First Glimpse * iPod Accessories

Just when we thought we'd seen every possible dock, speaker, case, skin, adapter, headphone, toy, and other accessory ever made for Apple's various iPods, another wave of innovatively designed add-ons crashes ashore, soaking us with even more choices. This month, we feature some of our favorites.

Reference Series * Reinstall Your Operating System

Sometimes the best—or only—way to revive a slow or quirky PC is to reinstall its operating system, but there are different types of installations for different sets of circumstances. In this issue we provide installation tips and techniques for various versions of Windows, Linux, and Apple's OS. You'll also find important maintenance and troubleshooting information that may help circumvent the need to reinstall in the first place.

Compiled by Christian Perry
Illustrated by Lori Garris

DESKTOPS & LAPTOPS

Despite Battery Recalls, Notebooks' Future Looks Bright

Even amid hordes of recalls that had consumers scrambling to replace batteries that could overheat and burst into flames, notebooks appear to have a bright future in the coming year.

Vendors such as Dell, Lenovo, Toshiba, Apple, Fujitsu, Panasonic, Sony, and Gateway all issued battery recalls since August 2006 for safety reasons, but customers still aren't shying away from notebooks. In a recent study by IDC that surveyed about 500 IT executives and more than 200 consumer PC buyers, 85% of respondents said the battery recalls wouldn't affect their future notebook buying decisions, while 15% said the recalls would indeed alter their buying.

"The silver lining is that most of the customers we surveyed aren't foregoing notebook purchases," said Richard Shim, senior research analyst with IDC's Personal Computing program, in a statement. "Instead, a small percentage indicates that they will alter their brand preference, meaning that vendors have an opportunity to win over new customers, forming new market dynamics."

Although a quick glance at the long list of vendors that issued recalls might suggest that consumers aren't necessarily any more protected from battery recalls when moving from one brand to another, it's apparent that the recalls aren't pushing customers away. In fact, the notebook market could have a banner year in 2007, if analyst predictions are on track.

In a report to investors in December, Merrill Lynch analyst Richard Farmer predicted that notebook revenue will outpace desktop revenue in the PC marketplace in 2007. Farmer estimated that companies' desktop revenue percent by the end of 2006 would be 47%, while notebooks would bring in 41.6%. However, in 2007, Farmer sees companies pulling in 45.6% of revenue from notebooks and 43.1% from desktops. The Merrill Lynch report also noted that notebook revenue numbers should jump to 50% in 2008, with desktops at 40%. Compare this with 2000, when notebooks stood at a mere 25%.

As for the batteries, some manufacturers are looking into safer production methods that should help to decrease the risk of overheating and fire. For example, Matsushita recently announced new technology that forms a heat resistance layer that consists of insulating metal oxide on the surface of the electrodes. According to the company, this layer will prevent short circuits from causing laptop batteries to overheat. Matsushita, known for its Panasonic brand, is also working to eliminate contamination by electrically conductive materials—the same problem that caused the massive recall of Sony batteries. ∎

Incremental Backups Take Center Stage

While regular backups aren't quite yet second nature among consumers, many users understand that the task is crucial for protecting data, because no one can predict when a hard drive will fail or a system will grow otherwise unstable.

Now that hard drive capacity is growing so quickly, it would seem that backups could grow more challenging than ever. We spoke with Jim Thomas, technical support manager for FarStone Technology, to discover what developers are doing to ease the process of backing up data amid the challenges posed by today's technology.

Thomas says that incremental backups, or sector-level snapshots, record only changes to an established baseline. "The entire hard drive, bit for bit, regardless of size, is not required to be duplicated . . . nor is it constantly backed up in its entirety," Thomas says. "This conserves the amount of space needed to store backups."
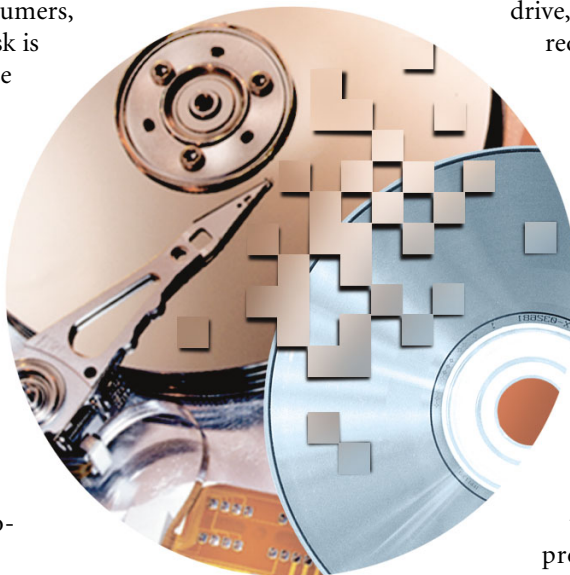
Today's incremental technology also reduces the time to create backups and dramatically reduces recovery time. Further, Thomas explains that whether backups are deployed locally in a hidden or protected area on the user's computer or stored online with an ISP (Internet service provider) or storage provider, only the data between the last backup (or baseline) and the present time are recorded. ▮

Digital Interfaces Fight For PC Supremacy

By now, you've likely heard of HDMI (**High-Definition Multimedia Interface**), an audio/video interface standard that's increasingly appearing on everything from graphics cards to home-theater components. But HDMI isn't the only all-digital interface in town.

DisplayPort, which recently hit version 1.1 and added HDCP (high-bandwidth digital content protection), boasts an impressive group of supporters, including Dell, HP, Lenovo, Intel, Nvidia, and Samsung. Further, AMD recently announced it would provide support for DisplayPort by the end of 2007, with full support in the works for 2008.

Unlike HDMI, DisplayPort isn't intended to connect a wide array of multimedia components, such as televisions and receivers. Instead, the standard is designed specifically to connect computers with monitors or computers with home theaters, and its creators expect it to eventually replace DVI (Digital Visual Interface), LVDS (low voltage differential signaling), and even VGA (Video Graphics Array) on computers.

Another standard, UDI (Unified Display Interface), is also in the mix, but unlike DisplayPort, UDI features backward compatibility with DVI and can interoperate with HDMI. Like DisplayPort, UDI is targeted at computers, though it's expected the standard won't differ much from HDMI—although UDI isn't bi-directional (like HDMI). One UDI supporter said that UDI is "HDMI optimized for the PC." ▮

New interface standards such as Unified Display Interface (pictured here) and DisplayPort are set to usher PCs into the next age of digital entertainment.

Share & Stream On Almost Any Device

Tired of all your multimedia languishing on your PC? The recently announced BluOnyx from Agere Systems (www.agere.com) could help release that content to other platforms, and you won't need advanced degrees to pull off the feat.

About the size of a credit card, the BluOnyx server lets mobile users share and stream music, video, and files to or from cell phones, PCs, digital cameras, game consoles, DSL (Digital Subscriber Line) routers, and other devices. This P2P (peer-to-peer) device doesn't require a PC to function, but PC owners will likely appreciate the ability to use content stored on their computers, thanks to the wireless connectivity of the BluOnyx.

In fact, any compatible device can connect to the BluOnyx using Bluetooth or Wi-Fi, or, if the device isn't capable of wireless connectivity, via a USB cable or an SD (Secure Digital) card. The device appears on a home or corporate network as a hard drive—with its own drive letter—so users can easily transfer files between the server and devices. The BluOnyx doesn't have its own screen but is instead controlled using a cell phone, PC, or television, giving users the ability to peruse its contents using the displays of any of those devices.

The device is expected to cost from $99 to $250, depending on storage capacity, which will range from 1 to 44GB. ▮

Your MP3s, video, and other files don't need to stay tethered to your PC. Agere Systems' BluOnyx lets you share and stream your media to almost any device.

Watered Down, Yet More Powerful

As AMD moves into the 45-nanometer realm, the company is beginning to reveal technologies that will help it compete with Intel in that space. One of these technologies includes immersion lithography, which gives chipmakers a hefty advantage over conventional lithography methods currently used to create chips.

To create CPUs, AMD, Intel, and other manufacturers use lithography to etch transistors into a silicon substrate using ultraviolet light. However, current lithography tools make it tough for manufacturers to drop below the 65nm process because the light's wavelength allows the chip to be shrunk only so far.
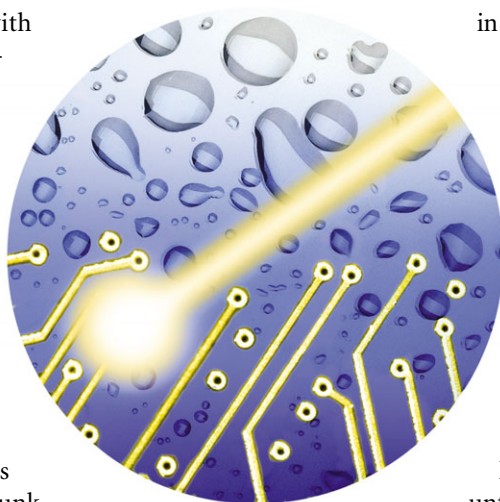
But with immersion lithography, purified water is used between the optics and the wafer surface, in turn refracting light. The process boosts the flow of light and increases depth of focus (or DOF) and optical resolution, enabling manufacturers to create higher-performance chips.

In recent years, it was expected that immersion lithography would be used as part of the 65nm process, but that prediction has apparently changed, as AMD said the technology would be one of several that helps the company move to 45nm. However, AMD's 45nm chips using immersion lithography aren't expected to appear until 2008, while Intel has said it plans to release 45nm products as soon as this year. ▮

Consider UPS
For Safe Voltage Delivery

Take a peek under your desk. Dust? Check. Rat's nest of wires? Check. Bargain-bin surge protector? Check. Unfortunately, that last check could spell doom for your PC and anything else connected to that cheap surge protector. In fact, even if you're using an expensive surge protector, you might not be getting the protection you need.

Aside from lightning strikes that can cause power outages, many houses also suffer from increases and decreases in electrical current that can stress powered equipment over time. This is why many PC users are switching to UPSes, or uninterruptible power supplies, which provide both surge protection and line conditioning that automatically adjusts low and high voltages to safe levels. Even better, they allow connected components to continue running even when a blackout occurs, delivering plenty of time to save work and safely shut down.

We tested APC's new Back-UPS RS 1500 LCD ($249; www.apc.com) and came away impressed with the device's ability to monitor every aspect of our power and deliver up-to-date information on blackouts, undervoltage and overvoltage situations, and even electrical noise. We cut the power to all the devices connected to the UPS—including our powerful PC, monitor, modem, and router—and still were able to use the components for more than 20 minutes on battery power alone. ❚

The Back-UPS RS 1500 from APC not only monitors the voltage and wattage load use by your PC and other components, but it also displays critical information on a built-in LCD.

My system crashed, and now I can't access a partition. How can I recover that data?

Check out GetDataBack from Runtime Software ($80; www.runtime.org). Unlike some other recovery programs, this powerful tool lets you see what it can recover before you actually pay for the activation key.

My kid used his crayons on my LCD. How can I remove the marks?

Dab a soft, lint-free cloth in a 50/50 solution of isopropyl alcohol and water and gently rub the marks off the screen. Then hide the crayons.

My pictures are consistently grainy. How can I improve them?

Try using a higher-quality print setting, and if that doesn't work, try using a higher-quality photo paper. Also, your printer might need cleaning, so check your printer's recommendations for cleaning its print head.

I flashed my motherboard's BIOS, but now I'm receiving a BIOS error when my PC boots.

Flashing a BIOS (Basic Input/Output System) is an extremely delicate process—even if you follow the manufacturer's directions precisely, you can still end up with a PC that won't boot. Try removing the motherboard's battery overnight, and then plug it in and try booting. Alternatively, some modern motherboards include replaceable BIOS chips, so contact the motherboard manufacturer to see if your board's chip is replaceable. ❚

CONVERGENT TECH: PDAs & SMARTPHONES

Smartphones? Thanks, But We'll Take Dumb Phones

Recently we reported that mobile Web use is popular just about everywhere *other* than the United States, but now research is emerging that the use of certain mobile devices and mobile media overseas is also outpacing similar use in the United States.

The penetration of smartphones is particularly more evident in Western Europe than in the United States, according to Telephia's European Subscriber and Device Report. In fact, in the third quarter of 2006, smartphone penetration was 8.8% among recent device buyers, compared with just 3.8% of similar buyers in the United States.

"High-speed networks like 3G were available earlier in Europe than in the USA," said Reza Chady, Telephia's managing director for Europe, in a statement. "To get the best out of these faster networks, mobile consumers were motivated to purchase more advanced devices like smartphones, which provided a better experience with data applications."

Italy led the way in smartphone adoption in that quarter, at 19.2%, followed by Spain at 9.5%, the United Kingdom at 7.5%, Germany at 4.9%, and Sweden at 3.6%. If the United States can eventually catch Europe in terms of smartphone penetration, the study's demographics could provide an interesting prediction of how users will adopt the technology.

Young professionals in Europe (aged 25 to 34) accounted for the largest group of smartphone owners, at 34% (though their numbers were slightly less among all mobile users, at 27%). Males accounted for 63% of smartphone users but only 49% of all mobile users.

Another study found that American consumers similarly aren't crazy about purchasing entertainment services designed for their wireless mobile devices. Almost three-quarters of respondents to an IDC survey (composed of 2,500 American wireless subscribers and customers) indicated that they didn't use any data services outside of messaging in the third quarter of 2006.

Why such an unenthusiastic response to mobile media? Price. The study found that 47% of respondents in the key demographic age group of users aged 18 to 24 said that mobile data services are too expensive. But before you think prices will drop—just like prices of any other emerging technology—experts warn that it might not even matter.

"The fact that four out of 10 survey respondents feel they are overpaying for data services does not bode well for the future of this market," said Lewis Ward, research manager for IDC's Mobile Consumer Services: Entertainment program, in a statement. "The survey also revealed a small group of U.S. consumers that believes data services are a bad idea, or worse, degrades the calling experience. Education may help this issue, but it's clear from the survey results that many people just want to use their mobile phone to make calls." ❚

News From The Help Desk

Our Most Common Tech Calls

COMPILED BY KYLEE DICKEY

Each month, we receive numerous technical support calls and email messages. Some computer problems are fairly common, and we find that many callers struggle to resolve the same issues. In this article, we cover three of the most common or timely tech support questions and provide our solution for each of them.

Q A tech support representative would like to see a screen shot from my computer in order to see exactly what is happening with my system. How can I take a screen shot?

A It is very simple to take a screen shot. First, make sure that all of the windows you want to appear in your screen shot are opened and positioned appropriately. Press the PRT SCN or PRINT SCREEN key, which is located in the vicinity of the BACKSPACE, HOME, and SCROLL LOCK keys on most keyboards. You won't see anything happen on-screen when you press the PRINT SCREEN key, and that's OK.

Next, click the Start menu and Programs (or All Programs in Windows XP). Point to Accessories and click Paint. When the Paint program loads, press CTRL-V to paste the screen shot into the open, blank document. Click File and Save As. Select a location to which to save the screen shot and enter a file name in the Save As field. Click the Save button.

Now all you need to do is send an email message to the tech support rep and send the screen shot as an attachment.
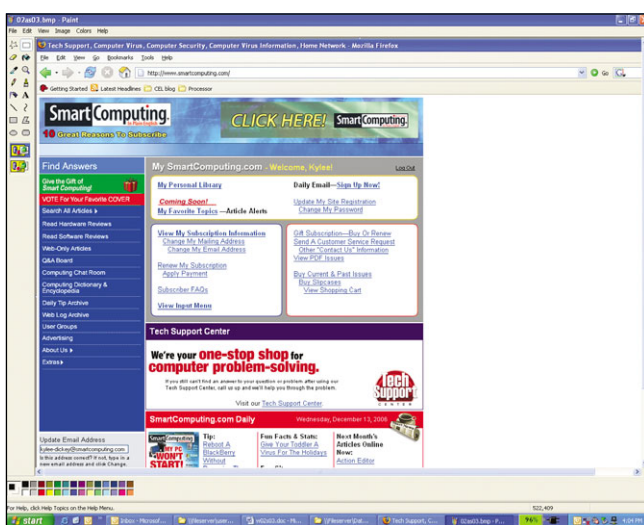
After you press the PRT SCN key, open Windows' Paint application and press CTRL-V to paste the screen shot into a blank document.

Q I can't launch Microsoft Word. Whenever I try, the program either freezes or shuts down immediately. How can I fix this?

A It is very likely that your Normal.dot file is corrupted. This file serves as the basic template on which Word bases all documents. It contains information such as which font to use, what margins to apply, and how to justify text. Unless you manually selected a different template when you created a document, each of your Word files is based on and references the underlying Normal.dot template. When you launch Word, it opens the Normal.dot template to start a new document. If the Normal.dot file becomes damaged, it can prevent Word from successfully launching. The good news is that you only need to take a few steps in order for Word to automatically create a new, unblemished Normal.dot file.

First, locate the Normal.dot file, which, by default, is hidden. Right-click the Start menu and click Explore. Click the Tools menu and Folder Options. Click the View tab and make sure that the Show Hidden Files And Folders radio button is selected. Click OK. Make sure that Microsoft Word is not running and then navigate to C:\DOCUMENTS AND SETTINGS*Username*\APPLICATION DATA\MICRO-SOFT\TEMPLATES, which is the most common location for Normal.dot. If Normal.dot is not in the Templates folder, you will need to search for its location on your hard drive.

To do this in WinXP, click the Start menu and click Search. Click Documents (Word Processing, Spreadsheet, Etc.) in the left pane. Click Use Advanced Search Options. (You'll need to do an Advanced Search because the default Search settings do not include hidden files, such as Normal.dot.) The Don't Remember radio button should be selected. Type **Normal.dot** in the All Or Part Of The Document Name field. By default, the Look In drop-down menu should display your Local Hard Drives (usually this will be C:). Click the Down arrow button to the right of More Advanced Options. Make sure that both the Search Hidden Files And Folders and Search Subfolders checkboxes are selected and click the Search button.

In the right pane, you'll see the search results. If there is more than one Normal.dot file listed, look for the one that is located within your user directory. For example, if you're logged in to your own user account but see two Normal.dot files, select the one that is located within a subfolder in your user directory rather than one that is contained within the Administrator directory.
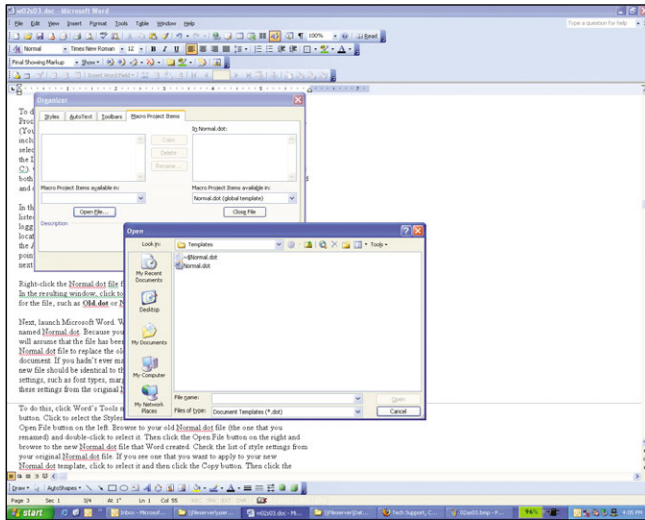
Use Microsoft Word's Organizer to browse for and open your old Normal.dot file (which you renamed earlier). You can then copy settings from your old Normal.dot file to the new Normal.dot file.

Right-click the Normal.dot file for your user account and click Open Containing Folder. In the resulting window, click to select Normal.dot. Press F2 and enter a new name for the file, such as **Old.dot** or **Normal.old**. Press ENTER.

Next, launch Microsoft Word. When it starts, it will automatically search for the file named Normal.dot. Because you have renamed the file, though, Word will not find it and will assume that the file has been deleted. Word will then automatically create a new Normal.dot file to replace the old, corrupted file. You'll see a blank Word document. If you hadn't ever made any changes to the original Normal.dot template, the new file should be identical to the old one. However, if you notice that you've lost some settings, such as font types, margins, or other formatting options, you may wish to import these settings from the original Normal.dot file.

To do this, click Word's Tools menu, Macro, and Macros. Click the Organizer button and select the Styles tab. Click both of the Close File buttons. Click the Open File button on the left. Browse to your old Normal.dot file (the one that you renamed) and double-click to select it. Next, click the Open File button on the right and browse to the new Normal.dot file that Word created. Compare the list of style settings from your original Normal.dot file and your new Normal.dot file. If you see one that you want to apply to your new Normal.dot template, click to select it and then click the Copy button. Click the Close button and then exit and relaunch Word.

If Word starts normally, you may open the Organizer and repeat these steps to add the next configuration from your old Normal.dot template. If Word does not launch properly, you know that the item you just tried to move was corrupt. Repeat the steps to rename Normal.dot and generate a new Normal.dot file. However, do not use the Organizer to copy the item you did last time, because it is corrupt.

Q I lost my Windows XP password. How can I access my computer again?

A As long as you don't have the normally hidden Administrator account password-protected, you should be able to reset your password. First, you'll need to start in Safe Mode. Restart your computer and continuously press the F8 key while your system is restarting. When you see the Advanced Options screen, use the arrow keys to select Safe Mode and then press ENTER. Wait for Windows to start. When you see the Welcome (logon) screen, click to select the Administrator account. Unless you had previously configured a password for this account, it should automatically start loading Windows in Safe Mode.

Once Windows has finished loading, click the Start menu and Control Panel. Click User Accounts in Category View or double-click User Accounts in Classic View. If you're using Classic View, you should already see a list of user accounts. If you're using Category View, you'll need to click User Accounts once more. Click the User Name for which you forgot the password and click Create A Password/Change A Password. Enter your new password in each of the first two fields and then enter a password hint in the third field. Click Create/Change Password. If you don't want other users to have access to your files, click Yes, Make Private when prompted. Once you've changed your password, restart your computer. When the Welcome screen appears, you should be able to log on with your new password. ▮▮

Feature Package Topics

Each *Smart Computing* issue includes tips, reviews, and information about a variety of topics. However, each issue also has a featured group of articles about a selected topic. Below is a list of the Feature Packages from the previous year. As a *Smart Computing* subscriber, you have access to all of our archived articles at www.smartcomputing.com.

NETGEAR RangeMax NEXT Wireless Router | MSRP: $129.99 | www.netgear.com

Extend The Possibilities Of Your Wireless Home

What is RangeMax NEXT? It's a router that extends the possibilities of your wireless network by providing a steady stream of up to 270Mbps, and is compliant with the draft 802.11n specification. This next-generation wireless standard utilizes advanced MIMO (Multi-In/Multi-Out) technology, delivering incredible speed and range and, for the first time, providing wireless interoperability at the highest speeds with other products that use Intensi-fi.™

A RangeMax NEXT wireless network creates and maintains stable connections and enough bandwidth to let you surf the Internet, download MP3s, make Internet telephone calls, share files, play network games, and stream high-definition video simultaneously from almost anywhere within a home or office. And because NETGEAR's NEXT is fully compatible with your existing 802.11b and 802.11g wireless products, you are sure to stay connected.

Preset internal antennas and draft 11n-True-Test high-performance testing and tuning provide maximum performance and high-quality streaming every time. Setup is simple, thanks to NETGEAR's Smart Wizard and 24/7 technical support.

NETGEAR®

The Ideal Way
To Showcase Your Digital Photos

The NuVue NV-800 is a digital photo album that provides a great way to showcase all your digital photos. The NuVue sports a high resolution, bright, 8-inch TFT (thin film transistor) screen that displays your digital photos in bright, vivid colors. Set up a slide show and play directly from a memory card. You can also select your favorite MP3 track to play along with the slide show. The NV-800's playback is limited only by the capacity of the memory card being used, and it accepts CF/SD/MMC/MS/XD cards for maximum compatibility with major digital cameras. The unit is sleek, light, and easy to use. It's great companion to your digital camera and an excellent way to show off your pictures to family and friends. It's the smart alternative to scrapbooking and traditional photo albums: Just insert the memory card from your digital camera and you're ready to show off your precious memories!

The NV-800 features:

• Easy insert & play, auto-start slide show
• High-resolution 8-inch color screen
• JPEG picture viewing
• MP3 playback
• Compatible with most major memory cards
• Customizable slideshows
• Desktop or wall mount

Say goodbye to old-fashioned photo albums and bulky scrapbooks. Share your photos the 21st-century way, with the NueVue NV-800 digital photo display.

Digital Spectrum
I n c o r p o r a t e d

LapWorks' Ergo Fan Riser | MSRP: $24.95 and $29.95 | www.laptopdesk.net

Comfort & Safety:
Adjust & Cool Your Notebook Computer

The Ergo Fan Riser is a very useful desktop stand with a built-in fan; it offers 10 adjustable elevating positions, up to a 35-degree incline. It's lightweight, and can be carried in your computer bag along with your laptop. The EFR can be set up anywhere there is a flat, surface. A thin rubber cushion along the front edge connects with the front edge of the notebook for gripping and to prevent scratching and abrasion. Four rubber pads on the bottom of the base grip the desk surface and hold the unit firmly in place. The adjustable elevating positions start at 2 inches and elevate the viewing screen to a maximum of 3 inches, in 1/8-inch increments.

The EFR comes in two configurations, both the same size: The EFR01C elevates and has a single cooling fan. The EFR01CH elevates, has a single cooling fan, and also sports a USB 2.0 4-port hub. The fans are powered by a USB connection to your computer. There is a connection for external power but an AC adapter is not included with the stand.

- Adjustable platform improves typing ergonomics
- Protects workspace from heat that can damage furniture surfaces
- Elevating mechanism raises the bottom of your notebook for better cooling

- Raises viewing height to reduce neck, back, and shoulder strain
- Bottom brace holds laptop in place and prevents sliding forward
- Folds flat for compact storage and portability
- Works well with standard 14-inch and 17-inch notebook computers
- Made from strong ABS plastic

The EFR has a one-year warranty against faulty workmanship, materials, and manufacturing.

LapWorks™

The Hills Are Alive With The Sound Of Sony

Move Your Videotapes To DVD

Marty Sems

Send your comments and "Meet Me In St. Louis" quotes to marty@smartcomputing.com

Continuing the tradition from my column last month, here's another impressive device that does things that used to require a PC.

I can't argue with the convenience of an appliance that shuttles video and photos directly to DVD from a camcorder, VCR, DVR, or memory card. Sony's DVDirect VRD-MC3 can do this. It saved me scads of time over my usual method of capturing DV camcorder footage with Nero on my PC, editing it, and writing it to disc.

You can attach the DVDirect to a PC for even more capabilities. In the VRD-MC3's case, it will act as an external DVD writer. It comes bundled with Nero 7 Essentials software for this purpose. With a PC connection, you'll also

DVDirect VRD-MC3

$249.99
Sony
(877) 865-7669
www.sonystyle.com

be able to burn more disc formats with the VRD-MC3, namely CD-R/RW (CD-recordable/rewriteable) and dual-layer DVD-Rs.

Like a VHS tape, you set the DVDirect's quality level depending upon the length of the video you're about to record. A 4.7GB disc will store about an hour's worth of footage at the highest quality setting. The VRD-MC3 supports the 16:9 widescreen aspect ratio, as well as common 4:3 full-frame video, plus Dolby Digital 2.0- and 5.1-channel sound from certain sources.

Along one side of the unit are video inputs such as 4-pin i.Link (Sony's version of FireWire), USB 2.0, and S-Video, as well as low-quality, RCA-style composite inputs. Digital audio can enter the DVDirect through i.Link or USB from a compatible device, while RCA stereo inputs handle analog sound.

On the opposite edge are slots for most memory card formats. You can dump photos from most types of cards to make a photo backup or slideshow disc. You'll only have three choices of background music for the latter, however, and the audio will stop abruptly at the end of the slideshow instead of fading out. If you have a PictBridge printer, you can hook it up to make prints directly from a photo disc or a memory card.

Some users will want to transfer store-bought VHS movies to disc, so I tried a handful of titles to see whether this was possible. Surprisingly, many tapes recorded just fine. Others utilized copy-protection technologies such as Macrovision that made the DVDirect refuse to record them.

In every case, the picture quality of my finished discs was pretty close to the source video or photos. However, I couldn't stand the ugly menus the DVDirect made. My only choice in the matter was to select among four background images. The DVDirect always represented each video stored on a disc with a garish, rectangular button with a perfunctory title at the upper left of the menu. Most of the discs I burned had single programs recorded on them, so it would've been nice if the DVDirect had centered the button in the menu instead of leaving room for the nonexistent buttons of other videos.

I couldn't burn music CDs from old cassette tapes or other audio sources without going through a PC, which seems like it should have been a no-brainer as a stand-alone operation. I could, however, burn the music to DVD using background video or images from another device. Here's a tip for an easy slideshow disc with your choice of audio source: Preview a group of photos in Windows XP's Windows Picture And Fax Viewer, run an S-Video cable from your graphics card to your DVDirect, and press F11 to start a slideshow. Press play on your audio, and start recording your DVD. Easy.

A DVDirect takes the work out of committing your old home movies and photo files to digital disc. It's not without flaws, but it does what it does quickly and easily. ▌▌

Is There Such A Thing As Too Much News?

Not When You're Using FeedDemon

Blaine Flamig

Send your comments to
blaine@smartcomputing.com

I've been a news junkie as long as I can remember. Even before I could read, my dad spent many nights watching the news with me, explaining as much as I could understand. On weekdays, we listened to the noontime market report over lunch. In the fifth grade, I walked my paper route most mornings with my nose stuck in the sports page scouring the box scores from the night

FeedDemon 2.1

$29.95
NewsGator
(800) 608-4597
www.newsgator.com

before. I started giving the front page my undivided attention in the eighth grade after Ronald Reagan was shot, and when Ted Turner brought CNN to our house years later, I was in heaven. After studying journalism in college and eventually becoming a working reporter, I satisfied my news addiction by tapping into the AP wire numerous times a day.

Today, most local papers have an online version, and if you can't find what you're after in print, you probably will at the online versions of *The New York Times*, *Washington Post*, *Time*, *Newsweek*, MSNBC, BBC, *Consumer Reports*, ESPN, *Sports Illustrated*, ABC News, Fox News, and so on. Add in Google News, Yahoo! News, Wikipedia,

WhiteHouse.gov or the thousands of blogs, podcasts, and videocasts, and the amount of news now available is seemingly infinite.

The problem for a news junkie isn't finding news; it's that there's too much of it to actually read without some help. One of the best options for this is using an RSS (Really Simple Syndication) aggregator, which is software that helps you subscribe to and gather information from Web sites that support the technology (most well-known sites do). The aggregator checks those sites for updated content, pulling it all into one program.

One of the best news aggregators going is NewsGator's FeedDemon. The program's standalone version costs nearly $30 (a Web-based version lets you access the program from any computer), but unlike similar free apps, FeedDemon is extremely fast and capable of handling hundreds of feeds gracefully. I've used FeedDemon for years, but the recent 2.1 version NewsGator recently turned loose offers the best overall functionality, interface, and performance I've seen from an aggregator to date. Feed-Demon's programmers not only went to town tweaking its interface, including churning out a great newspaper-like layout, they've made importing feeds from other programs especially easy. Better for regular podcast listeners is FeedDemon's ability to automatically transfer podcasts to an iPod or other media player at a time you configure, such as overnight.

The process is a bit overwhelming at first, but FeedDemon takes the edge off by offering a tutorial and an Outlook-like interface. Sites you subscribe to are grouped in folders along the left. Click a folder, and the sites display. Click a site, and its feeds show up as headlines in an upper-right pane. Click a headline, and a URL to the full article, along with some text and maybe a photo or two, appears in a pane below. To read the entire article, click the URL.

FeedDemon will save your favorite feeds in a folder, use keywords you provide to filter feeds to a Watch folder, and perform as a fully enabled browser. I still subscribe to my local newspaper, but even if it published an edition 10 times a day, it couldn't deliver the news to me with the speed and ease of use FeedDemon does. ❚❚

Password Proliferation

Just How Many Can We Remember?

Kylee Dickey

Send your comments to
kylee@smartcomputing.com

The harder we make it for a cracker to figure out our passwords, the harder we make it for our own *brains to retrieve our passwords.*

My mind is a cluttered place, full of creative ideas I'd like to explore someday, information I need to search for online, and projects I must complete around the house. Lately, I've used a combination of PIM (personal information management) software and a notepad to jot down my thoughts. I do feel more organized now that I don't have to constantly retrieve information from cobweb-ridden corners of my brain. However, there's still one type of information that I can't seem to manage: passwords.

I've gotten more organized by writing everything down, but it's certainly not advisable to jot down all of my passwords. It defeats the purpose of a password if someone else can find it. Still, it's become more difficult to manage the ever-expanding list of passwords I must use to log on to Web sites, pay bills, check my voicemail, enter my apartment building, withdraw money from the ATM, chat online with friends, and even read the day's news.

Escalating Complexity

I remember when security advice for passwords was just, "Don't use words such as your child's name or numbers such as your phone number or birthday." Soon, many sites required a combination of both letters and numbers. And now many sites require special characters, as well. Now many companies and Web sites require that we change our passwords every few months. Just as I finally learn my new password, it's time to change it again.

There's something ironic about all of the password-security measures we must take. The harder we make it for a cracker to figure out our passwords, the harder we make it for our *own* brains to retrieve our passwords. The human brain memorizes strings of characters and lists by finding patterns or associating them with other things, such as significant objects, people, or events. If we design passwords to be easier to memorize, though, they are also easier for someone else to crack.

As an example, many people create passwords that contain a word describing the site they will access. Of course, if your Amazon password includes the word "amazon" or "shopping" in the name, you've made it that much easier for a cracker to break into your account.

Many people also make password management easier by using the same password for multiple Web sites. That way, there are fewer passwords to remember. This sounds like an excellent idea, except for one small detail. If someone cracks your password on one site, that person can access several of your other accounts on other sites. Something like this actually happened to me several years ago. I used the same password for multiple online forums. The administrator of one forum had access to my password for his forum, and he used my password to log on to my accounts on other forums. He read my private messages to other users, and he posted messages, pretending to be me. I learned my lesson and haven't used the same password for multiple sites since.

I think the main problem with keeping passwords secure is that we just have an unnecessary number of passwords to remember. One of my pet peeves is when a news site requires free registration before accessing an article. I have enough passwords to juggle for sensitive sites (such as online banking) and sites with paid subscriptions (such as SmartComputing.com) without trying to remember more passwords for every newspaper from which I occasionally read an article.

Forgot Your Password?

I wish I had an answer to this problem. I'm currently trying to develop a new system of creating passwords that will make them difficult to crack but maybe slightly easier to remember. Only time will tell if my efforts are successful or if I once again find myself clicking the Forgot Your Password? link. ▐▌

The Two (PC) Towers

These PCs Won't Break The Budget

Joshua Gulick

Send your comments to
joshua@smartcomputing.com

Compaq Presario Media Center SR2050NX

$700 (after two $50
mail-in rebates)
HP
(888) 999-4747
www.hp.com

Dimension C521

$729
Dell
(888) 799-3355
(512) 338-4400
www.dell.com

Our reliance on PCs as tools and entertainment devices is growing, while prices continue to drop. That's not to say that the days of the expensive PC are over; not by a long shot: *Smart Computing*'s sister publication, *Computer Power User*, regularly reviews high-end PCs that break the $3,000 and even $5,000 marks.

But you don't have to shell out that much cash to buy a standard PC. In fact, you can easily find complete computer systems for under $700. As a result, many families are moving away from a single computer that services the entire family to individual computers for each family member. According to a recent OMD study, the average household that has an Internet connection owns 2.4 TVs and two computers. Are these sub-$700 PCs any good? I asked Dell and HP to each send me a home-use PC that wouldn't break a $700 budget.

Dell Dimension C521

Dell estimates that its system will just barely breach the $700 mark—$729—by the time you read this. The C521 includes a 2GHz AMD Athlon 64 X2 Dual Core 3800+, which lets it handle multiple tasks simultaneously. If you dabble in digital home movies, for example, you'll find that a dual-core processor offers better performance (than a standard, single-core processor) when you encode video and surf the Web or browse the iTunes store at the same time. The system, which runs Windows Vista Home Premium, also has 1GB of memory, a 160GB hard drive, and a 17-inch flat-panel monitor. A neat feature: You can stand the tower upright or lay the PC on its side.

HP Compaq Presario Media Center SR2050NX

HP's system runs Windows XP MCE (Media Center Edition), which has all of the features you find in Windows XP, plus features for viewing your pictures, movies, and other media. WinXP MCE can record and play TV if the computer has the appropriate hardware, but this PC lacks the necessary TV tuner. The SR2050NX has a dual-core 2.8GHz Intel Pentium D 820 processor, 1GB of memory, a 250GB hard drive, and an optional 17-inch flat-panel monitor.

Out Of The Box

I set up both systems and the monitors without trouble, thanks to their clear instructions. I was a little disappointed to see that both PCs inundated me with windows as soon as I powered them on for the first time.

Once I finally reached the Windows Desktops on the Dell and HP systems, I performed some basic home-use tasks, including ripping songs from CDs, surfing the Internet, and watching DVDs. Both systems performed flawlessly. I also ran a benchmark program that tests the PCs' office task capabilities. The systems performed better than I expected—they're clearly solid home-use PCs. The Dell C521 has better graphics capabilities, but neither PC would make a serious gaming machine. If you have a gamer in your family, you'll probably need to buy a more expensive system with a heavy-duty video card.

The HP SR2050NX began crashing about five days after I set it up, prompting a call to HP's tech support. I reached a person within two minutes. The tech was polite and knowledgeable. Once we reseated the memory and power supply connector, the system worked perfectly.

Your Next Home PC

Both systems offer solid performance for the price, and I'd recommend either to a family member. That said, if I were buying one for myself, I'd choose the Dell C521. It has a unique chassis that gives it an edge over HP's SR2050NX from a space-saving standpoint. The Dell chassis is exceptionally slim, which means you can more easily slip it into tight spaces near your desk. It can also sit on its side. I found that by putting the C521 on its side and standing the monitor on top of it, I had a comfortable, easy-to-reach system that didn't take up much space. ▐▌

Suite Deals

System Utility Suites

We've said it before, and we'll say it again: Every computer user needs an up-to-date antivirus utility and a regular system maintenance routine. Anyone who heeds our advice in these two areas will benefit from optimal PC performance and enhanced data security. Unfortunately, a sizeable portion of the computer-using population has not taken our recommendations to heart. These users could resolve their computer issues by investing in a system utility suite, such as those featured in this month's software roundup. The market offers several competitive choices. But which one is best?

System Suite 7 Professional

Some computer users want a system utility suite that comes bundled with a wide variety of components. For these users, System Suite 7 Professional would be a popular choice. It includes more than 60 individual tools, including both the expected (for instance, antivirus, firewall, defragmentation, and system recovery) and the unexpected (for instance, ActiveX controls management, error logging, and file compression). That's a lot of functionality rolled into one product.

Other users are looking for a suite that is easy to use. SystemSuite 7 would be popular with these users, as well. The suite's console interface simplifies the process of accessing particular tools. We appreciated its scheduling component, which allows users to specify how often and when to run seven key utilities, including its defragmentation, antivirus, antispyware, and drive diagnosis tools. We also appreciated the five One-Click Solutions wizards, each of which performs a series of related tasks in one fell swoop. For example, the Comprehensive wizard automatically backs up key system files, scans and defragments the hard drive, and checks for viruses and other forms of malware. Of course, users also have the option of running each component as a separate process.

We had a positive experience with System Suite. Our only complaint is that so many of the included tools are redundant. Who needs another defragmentation utility? Another file compression tool? Another drive cleanup component? They just clutter up the hard drive with unnecessary code. We won't complain too much, though. The suite's reasonable price tag—and inclusion of three product licenses—ensures that users will feel like they're getting a great value for the money. Users may not even mind having to pay $24.95 for 10 minutes of phone-based technical support (budget-minded users may prefer to use the 110-page users manual or the very thorough online support base).

WinCleaner Complete PC Care 10

The developers of WinCleaner Complete PC Care did not set out to create the most technically advanced product in the marketplace. They simply wanted to produce a reasonably priced product that meets the typical needs of a typical user. For the most part, those developers succeeded.

The first thing we noticed about Win-Cleaner Complete was the quickstart guide that came bundled with it. This hardcopy manual not only provided the expected step-by-step installation tutorials, but it also supplemented the instructions with full-color screen shots. Despite a few too many punctuation mistakes, the quickstart guide represents everything a users manual should be: descriptive and thorough. The manual offers little guidance beyond the installation, which was more than a bit disappointing, but the fact that phone-based tech support is available free to registered users (long-distance charges apply) made us feel a lot better.

Of course, it's likely that users of Win-Cleaner Complete will never need tech support. The suite's intuitive interfaces and on-screen guidance make it possible for even the least-experienced users to optimize their PCs with minimal effort. The Startup Organizer, for instance, provided a list of every program that runs during the startup routine, as well as a plain-English explanation of what each of those programs does. Users can refer to this information when deciding whether to include a particular

BUYING TIPS

A utility suite can be a worthwhile investment, but only if used properly. To get the most from a utility suite, familiarize yourself with its various components and run them regularly.
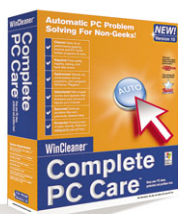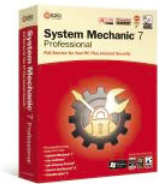
program as part of the startup routine. The other 11 utilities that compose WinCleaner Complete are equally easy to use.

That's the good news. The bad news is that a handful of performance gaffes prevent us from giving the utility a wholehearted endorsement. We were disappointed to discover that we could not open the program's built-in Help files, for instance, and the antivirus utility displayed the contradictory message that our subscription was due to expire in December 2007, but we should renew now because the subscription had already expired (say what?). Users also should note that this suite is missing some key components—a firewall and system recovery tool—that come standard with its competitors.

System Mechanic 7 Professional

System Mechanic 7 Professional certainly made a good first impression. The product ships with more than 40 separate tools covering a range of tasks, including drive and memory defragmentation, pop-up blocking, and Registry repair, as well as antivirus scanning, firewall protection, and total system recovery. Users can run each of the tools separately or take advantage of the six Total Solution options, which consist of several related tools running together to accomplish a common goal such as faster performance, better protection, or increased drive space. System Mechanic also provides a PC TotalCare solution that combines all of the most important utilities into one process.

We certainly appreciated the many tools and one-click solutions. Some were redundant, of course—how many defragmentation and uninstall utilities does a person really need? But we warmly welcomed other utilities, such as the program relocation utility, which allowed us to move all of a program's files to a different folder or drive, and the email recovery utility, which helped us recover previously deleted email messages. As is the case with SystemSuite, System Mechanic's installation CD doubles as a recovery disc, and the suite comes with three licenses so users can install it on three computers.

What impressed us most about System Mechanic, however, was its console interface. The suite's developers designed a user space that is packed full of information and shortcuts without becoming overbearing or confusing. We liked the continuously updated performance and IntelliStatus meters that measure the system's overall health and security status. We liked the I Want To list with its neat presentation of various tasks and one-click shortcuts for launching them. We liked the Problem Task list, which itemizes all identified problems along with automated repair options. And we liked the System Mechanic Odometer that quantifies the exact number of problems the utility suite fixed and how many bytes it freed up for additional storage.

However, the good impression came to an abrupt end when we tried to retrieve email

Software Information

	Price	Company	Contact Information	URL
System Suite 7 Professional	$59.95	Avanquest	(800) 325-0834 (925) 474-1701	www.avanquestusa.com
WinCleaner Complete PC Care 10	$49.95	Business Logic	(905) 542-3315	www.wincleaner.com
System Mechanic 7 Professional	$69.95	iolo technologies	(877) 239-4656 (323) 257-8888	www.iolo.com
Norton SystemWorks Premiere	$99.99	Symantec	(408) 517-8000	www.symantec.com

Scorecard

	Features	Ease Of Use	Installation	Support/Documents	Price	Overall Score
System Suite 7 Professional	5	5	4	3	5	**4.4/5**
WinCleaner Complete PC Care 10	3	4	4	4	4	3.8/5
System Mechanic 7 Professional	5	3	4	4	4	4/5
Norton SystemWorks Premiere	5	4	5	3	3	4/5

with our copy of Microsoft Outlook. Invalid Pointer Operation and Access Violation errors popped up each time we used the email client, and we never could figure out a way to make Outlook work while the utility suite was installed on our PC (Outlook functioned perfectly—and retrieved 14MB of messages—the first time we started it after uninstalling System Mechanic). System Mechanic has all the makings of a great utility suite. We trust iolo will work out some of the minor bugs and post fixes on its Web site so users can take advantage of everything the suite has to offer.
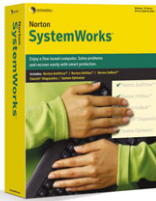
Norton SystemWorks Premiere

As far as many users are concerned, the most important component in a system utility suite is the antivirus utility. And for that reason alone, Symantec's Norton SystemWorks Premiere is sure to garner a lot of attention. The suite bundles the company's venerable antivirus utility, Norton AntiVirus, with a handful of its other respected products, including Norton Save & Restore, Norton GoBack, and Norton Utilities. It's almost enough to make the $100 price tag seem like a deal.

We liked the way the suite protected our PC. The installation took more than half an hour to complete because it insisted on scanning for viruses before loading code onto the hard drive. SystemWorks was the only utility to perform such a scan during the installation, and it's this type of detail that makes users feel confident about the antivirus protection they're going to get.

Unfortunately, users may feel less than confident when facing the suite's console interface. Its tabbed structure was slightly confusing. We understood that the Norton AntiVirus tab would help us control and configure the antivirus utility, and we understood that the Norton SystemWorks tab would help us control and configure everything else. But what exactly the Norton Protection Center tab was supposed to do—other than promote sales of Norton Confidential, an online transaction security utility—was beyond our comprehension. We also didn't care much for the way the AntiVirus and SystemWorks tabs presented the suite's various components. The menu-based interface design kept our options hidden most of the time, and the white-on-white pop-up bubbles looked more like program malfunctions than tool listings.

The individual utilities themselves performed to our satisfaction, and we appreciated the little extras—such as the option to play music during diagnostic tests and the handy scheduling tool that allows users to set both start and stop times for drive maintenance tasks—that give the suite character. But its unwelcoming interface coupled with its relatively high price and expensive phone-based support options ($29.95 per incident) means it failed to win our vote as the best system utility suite on the market.

Suite Temptations

Every PC needs an antivirus utility and drive maintenance tools. Whether every PC needs a system utility suite is another question. All of the products provided here deliver an impressive array of programs that will help protect a typical machine from the effects of wear-and-tear and malware. But average users can get comparable protection by investing in a standalone antivirus utility and by taking advantage of Windows' built-in utilities.

To make the investment worthwhile, a system utility suite has to be comprehensive in its protection, and it has to be reasonably priced. Based on this criteria, we selected System Suite 7 Professional to receive our Smart Choice Designation. ❚❚

BY JEFF DODD

March 2007
Smart Choice

System Suite 7 Professional

A Star Performer

Acrobat 8 Professional

$449
Adobe
(800) 833-6687
www.adobe.com
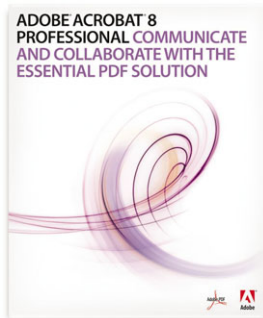
With several companies now offering PDF (Portable Document Format)-creation software or services, would a consumer or small-business owner want to purchase the latest release of Adobe Acrobat, and in particular the professional version? After reviewing it and seeing the new features, the answer is a resounding "maybe." The program has finally incorporated functionality we've been wanting for years, making it worth emptying that rainy-day penny jar.

First of all, if you purchased Acrobat 5.0 or later (even the Standard version), you can upgrade to Acrobat 8 Professional for $159—a pittance for the performance. However, if you don't already own Acrobat, or you only need to create simple PDFs for casual viewing, this powerful product has more muscle than you'll likely need. Also, if you plan on migrating to Office 2007, avoid Acrobat 8 for the present, as it integrates beautifully with Office 2000 through 2003, but at press time offered no support for the upcoming release of Microsoft's popular productivity suite.

Industry gurus are singing the praises of Acrobat 8 Professional's enhanced security features, but we like it for two other reasons (one of which was present before this edition but is now better than ever). First, with Acrobat 8 Professional, users of Adobe Reader software can now interact with PDFs you create. If you frequently find yourself collaborating with others on social, church, school, or other committees, you will love this feature (new with this release). Pass around that newsletter or meeting agenda as a PDF, and everyone can add comments, regardless of whether they own Acrobat. They can also digitally sign them, and if there are forms (orders, invitations, etc.) to fill out, they can execute, save, and submit those to you, as well.

Our other favorite feature similarly will appeal to those whose bailiwick is community involvement. Do you create newsletters, flyers, and other print documents in a proprietary-format program and then struggle with compatibility problems when you need to distribute them electronically? Forget it with Acrobat 8 Professional.

Not only will the product automatically integrate itself into Microsoft Word, Excel, Publisher, and many other programs, but it makes its PDF-creation engine available to any program—including Web browsers, email clients, even media managers or navigational guides—with a print function. Furthermore, like its predecessors, Acrobat 8 Professional can embed fonts and high-resolution images in PDF documents from many sources, making it easier to transition to professional printing. Acrobat's printing controls are powerful and will require practice and learning to master, but they can result in products that equal the output from professional graphics programs (assuming the original input is of high quality).

Acrobat 8 Professional has all sorts of new additional features, such as the ability to combine and optimize multiple files from different sources and/or programs (including selected elements, such as single worksheets or document pages) into a single PDF. You can also export selected text and images (rather than the entire contents) from a PDF to a different file format. Microsoft Word users get the added bonus of saving PDF files in that program's format without losing the layout, fonts, and other attributes.

On the business side, Acrobat 8 Professional incorporates numerous features perfect for those who operate in competitive environments. You can encrypt or password-protect your PDFs, extract sensitive data without re-creating the file, search for and black out specific embedded text, and set permissions at an operational level (print but not save, save but not modify, etc.). You can also use built-in OCR (optical character recognition) technology to create searchable PDFs.

Finally, Acrobat 8 Professional integrates with Adobe Connect, a collaborative, virtual meeting space, ensuring that you and your colleagues stay on the same page regarding your documents. Adobe has made its wizards more intuitive, making it easier for novices to find their way around. Have you started counting those pennies yet? ❚❚

BY JENNIFER FARWELL

Scorecard

Performance 5
Ease Of Use 4
Installation 5
Documentation 5
Price 5
Overall Score 4.8/5

Multimedia

Web Design Made Easy

Web Easy Professional 6

$49.95
VCOM
(800) 325-0834
www.webeasyprofessional.com

Like its peers, Web Easy Professional 6 asserts it has demystified Web design so even a total rube can design a masterful site. While this is a bit of an overstatement, we agree that Web Easy Pro handles itself nimbly.

Installation of the product is quick and easy, and the handbook is detailed enough to answer most initial questions. The interface is clean and user-friendly, although the Cue Cards (which provide explanations) are largely worthless.

The default display includes a button-based Activity Center offering numerous self-explanatory options. These include Interactive Tutorial, which teaches you the program and introduces new topics.

The adventurous can skip the tutorial and select Web Site, which opens the site design wizard. The wizard is only a departure point, but it gets you going. After you make a selection, adding and editing text and images is easy, and well-marked menus across the top of the display assist with the process. Importing HTML (Hypertext Markup Language) is more challenging, but not impossible.

One place where Web Easy Pro stumbles is with site publishing. The program doesn't store files in HTML format; instead, you generate the HTML before publishing (note where Web Easy Pro saves the files in case you want to move them). Furthermore, if you turn down the program's free hosting trial, Web Easy Pro will ask for lots of connection information yet offer little help if you run into problems. (One hint: When the program asks for Host Name, it means your site address, not that of your hosting service.)

Use the free trial to work out connection kinks in advance. If you get past those, Web Easy Pro is a fairly comfortable ride. Perks such as a Text Assistant (ready-made text snippets), drag-and-drop editing, flash creation and graphics editor-optimizer tools, and thousands of pieces of clip art make it even smoother. ▮▮

by Jennifer Farwell

Consumer

Your Legal Eagle

MyAttorney Home And Business

$39.95
MySoftware
(800) 325-0834
www.avanquestusa.com

Do you ever find yourself searching online for documents you can use for credit disputes, transcript requests, or insurance documentation? If so, you may fall in love with MyAttorney, a collection of over 1,000 up-to-date letters, contracts, worksheets, and other forms that are valid in all 50 states. (The single exception to this rule is the collection of estate documents, which are not legal in Louisiana.)

The product bears numerous disclaimers that state it is not a substitute for legal advice or representation. We'll repeat that warning, because the company is not going to cover your expenses if using its forms gets you into hot water.

The software goes beyond merely letting you customize its forms. Rather, it prompts you to set up personal and business profiles and uses that data to help execute documents more quickly. During profile setup, it also asks questions and generates a list of documents you'll likely need.
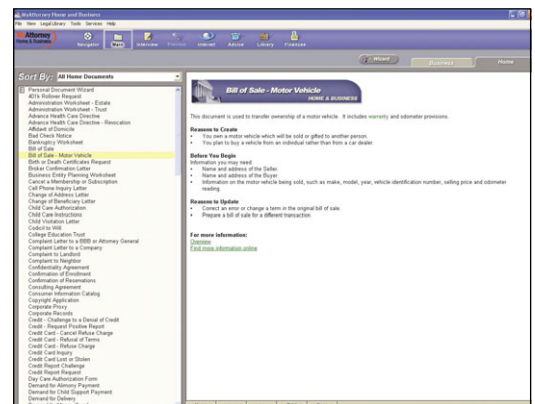
A wizard walks you through the process, probing for variables. You also have the option of saving customized forms to the database for future use. If you make mistakes, the preview mode makes it easy to perform edits, yet difficult to change language you shouldn't alter.

We cannot imagine an easier way to obtain the basic legal documents many of us should send but often fail to execute properly. Bonus tools, such as a legal FAQ and a financial decision calculator, further sweeten the deal. ▮▮

by Jennifer Farwell

Staff Picks
Our Experts Pick The Best Hardware

HP iPAQ rx5915 Travel Companion

The HP iPAQ rx5915 Travel Companion is unlike any other iPAQ I've previously reviewed. The name says it all: travel companion. With an integrated GPS (global positioning system) receiver, TomTom Navigator 6 software, and preloaded maps of the United States and Canada, this iPAQ is ready for your next trip. The rx5915 also comes with WorldMate Standard Edition, an application that includes a world clock, currency converter, weather information, area code listings, packing list, and more.

TomTom Navigator 6 is very easy to use. The rx5915's integrated speaker isn't quite as loud as I would like for turn-by-turn voice instructions, but it still gets the job done.

The rx5915 includes several entertainment, organization, and connectivity features. It can play MP3s, display photos and slideshows, record voice notes, and comes with Solitaire and Bubble Breaker. The rx5915 runs on Windows Mobile 5.0 and includes mobile versions of familiar programs such as Word, Excel, PowerPoint, and Internet Explorer. The rx5915 incorporates a calendar, address book, to do list, and notes that you can synchronize with your computer. Whether you want to check your email, surf the Web, or connect to a Bluetooth-enabled device, you can do it with the rx5915's built-in 802.11b/g wireless and Bluetooth 2.0.

Whereas some converged devices sacrifice quality in order to incorporate additional features, the rx5915 does a great job of functioning as a full-featured PDA (personal digital assistant) and a full-featured GPS tool. ▌▌

**iPAQ rx5915
Travel Companion**
$599.99
HP
(888) 999-4747
www.hp.com

BY JENNIFER JOHNSON

COMPUTERS		
Desktops <= $1,500 Dimension C521 About $700	Josh Dell www.dell.com	*This snazzy value system stands upright or sits on its side. The PC has a dual-core processor and a spacious hard drive, as well as a 17-inch flat-panel display. If you're looking for a basic home-use PC, you've found it.*
Desktops > $1,500 FX530XT $3,999.99	Josh Gateway www.gateway.com	*The FX530XT makes a great gift for a gamer who wants the very best components. This system includes a factory-overclocked processor and a 24-inch monitor.*
Notebooks <= $1,500 Pavilion dv9023us $1,399.99 (after rebates)	Jennifer HP www.hp.com	*With 2GB of RAM, plenty of storage, and a 17-inch screen, this laptop will keep you entertained while on the go.*
Notebooks > $1,500 VAIO TXN15P/W $2,299.99	Andrew Sony www.sonystyle.com	*Sony has been making VAIOs for 10 years now, and all that experience really shines through on this mobile dynamo.*
HANDHELDS		
Handhelds & PDAs (personal digital assistants) iPAQ rx5915 Travel Companion $599.99	Jennifer HP www.hp.com	*This handheld will not only keep you organized, it will also help you get to your next destination with turn-by-turn voice instructions using integrated GPS (global positioning system).*
INPUT DEVICES		
Keyboards USB Enhanced Multimedia Keyboard $22.95	Josh Dell www.dell.com	*If your desk has a keyboard tray, you'll appreciate this keyboard's small footprint.*
Mice/Trackballs/Trackpads MX Revolution $99.99	Jennifer Logitech www.logitech.com	*The MX Revolution has a free-spin mode that will effortlessly scroll to the end of long documents with a flick of the wheel.*
MONITORS/DISPLAYS		
CRTs (cathode-ray tubes) E70f $159	Josh ViewSonic www.viewsonic.com	*CRT monitors aren't obsolete just yet. The E70f offers a maximum resolution of 1,280 x 1,024 and a 0.25mm dot pitch. Most importantly, it offers crisp, clear text and has easy-to-use menus.*
LCDs <= 19 inches SyncMaster 931B $249.99	Blaine Samsung www.samsung.com	*This display offers a 700:1 contrast ratio, 1,280 x 1,024 resolution, and a 160-degree viewing angle.*
LCDs > 19 inches SyncMaster 225BW $399.99	Blaine Samsung www.samsung.com	*A 1,680 x 1,050 resolution, 700:1 contrast ratio, and Samsung's quality make the 22-inch 225BW worth seeing up close.*

Samsung SyncMaster 22-inch 225BW LCD

No matter the game, DVD movie, or benchmark test I threw at Samsung's 22-inch 225BW, this magnificent LCD handled each with aplomb. Decked out in piano black, the 225BW owes much of its stellar performance to its 5ms (gray-to-gray) response time and 700:1 contrast ratio.

The 225BW's only stumbles included having one stuck pixel, showing the slightest trace of a ghosting and streaking in a few scenes and sequences, and ever-so-slight loss of detail in extremely dark areas. Otherwise, Samsung's 160-degree rated viewing angles appreciatively held true in my testing. ▌▌

SyncMaster 22-inch 225BW LCD
$399.99
Samsung
(800) 726-7864
www.samsung.com

BY BLAINE A. FLAMIG

PRINTERS

Inkjet <= $150 Stylus Photo R220 $89.99	Kylee Epson www.epson.com	*This six-cartridge inkjet photo printer is very reasonably priced. It provides borderless printing on 4- x 6-inch, 5- x 7-inch, 8- x 10-inch, and 8.5- x 11-inch paper. The included CD/DVD tray lets you print directly on inkjet-printable discs.*
Inkjet > $150 Pixma iP6600D Photo Printer $179.99	Kylee Canon www.usa.canon.com	*The Pixma iP6600D is a six-cartridge inkjet printer with one-picoliter-sized droplets, a 3.5-inch color LCD, memory card slot, and built-in controls on the face of the top of the printer.*
Laser <= $200 HL-2040 About $120	Nathan Brother www.brother-usa.com	*The HL-2040 features a competitive price and 2,400 x 600dpi (dots per inch) print resolution to create high-quality monochrome prints.*
Laser > $200 to $500 ML-3051N $249.99	Nathan Samsung www.samsung.com	*Powered by a 400MHz processor and featuring a 30ppm (pages per minute) print speed, the ML-3051N is suitable for both small office and home laser printer duties.*
Laser > $500 T640dn $899	Nathan Lexmark www.lexmark.com	*This offering from Lexmark is network-ready and includes a 350-sheet duplex unit to produce large quantities of two-sided material.*
MFDs Pixma MP830 $299.99	Kylee Canon www.usa.canon.com	*This inkjet MFD (multifunction device) provides not only standard-sized prints but also 4- x 6-inch borderless photos, a built-in flatbed scanner and copier, a 33.6Kbps (kilobits per second) fax modem, and Hi-Speed USB connectivity.*

STORAGE

Flash Memory & Portable SanDisk Cruzer Titanium 2GB $109.99	Blaine SanDisk www.sandisk.com	*Great price, great speed, cool retractable USB connector, nice bundled software apps, and a case with a crush-force resistance of more than 2,000 pounds makes this little thumb drive a giant performer.*
CD & DVD Drives LH-20A1H About $40	Marty Lite-On us.liteonit.com	*20X DVD±R writing is the highlight of this LightScribe-capable burner.*
Hard Drives Raptor WD1500ADFD 150GB $259.99	Marty Western Digital www.westerndigital.com	*Here's a returning champ. Put your operating system and applications on one of these and give your PC a noticeable speed boost. You can always use a cheaper and larger 7,200rpm drive to store your personal data.*

VIDEO/PHOTO

Digital Camcorders < $500 SC-D365 About $300	Andrew Samsung www.samsung.com	*This affordable camcorder features an impressive 33X optical zoom and a versatile 4-in-1 memory card slot.*
Digital Camcorders > $500 Everio GZ-MG77 $900	Andrew JVC www.jvc.com	*This hard drive-based digital camcorder is easy to use, comfortable to operate, and loaded with features.*
Digital Still Cameras - Point & Shoot PowerShot A710 IS $399	Kylee Canon www.usa.canon.com	*This 7.1-megapixel camera features 6X optical zoom, Image Stabilization Technology, and a 2.5-inch wide viewing angle LCD.*
Digital Still Cameras - Adv./Prosumer D40 $599.95	Blaine Nikon www.nikonusa.com	*The latest from Nikon is the company's smallest and easiest-to-use SLR (single-lens reflex) camera yet, and it's nicely priced to boot.*
Graphics Cards <= $150 H165PRF512AN-R Radeon X1650PRO $136.99	Andrew HIS www.hisdigital.com	*This is a solid performing 512MB AGP (Accelerated Graphics Port) graphics card.*
Graphics Cards > $150 GeForce 8800 GTX WC $799	Andrew BFG www.bfgtech.com	*This appears to be the best way to get a do-it-yourself overclock of the GeForce 8800 GTX.*

Windows XP: Backing Up's Not Hard To Do

F ailing to back up your system is like skipping regular visits to dentist; you may get away with it for a while, but your chickens will eventually come home to roost.

Windows XP includes a built-in Backup utility you can use to safeguard your precious data. If you're running WinXP Professional or Media Center Edition, the utility is already installed on your system.

As it turns out, you won't find the Backup utility on WinXP Home Edition because it's not preinstalled, and you can't add it via the Add Or Remove Programs. All is not lost, though: You can still use WinXP's Backup utility with WinXP Home. It's on the original Windows XP CD-ROM, where you'll find it in the Valueadd\ msft\ntbackup folder. Double-click the Ntbackup file in that folder to install the utility on your system. No matter which version of WinXP you have, once it's installed, you'll find Backup under Start, All Programs, Accessories, and System Tools.

Back Up Data In Wizard Mode

Backup starts in a wizard mode that walks you through configuring and customizing your backup. You'll first be asked to specify whether you want to perform a Backup or Restore: Choose Back Up Files And Settings, which should be the default option.

Then it's time to select the data you want to back up. The first two options are to back up My Documents And Settings (the "My" in this case refers to the Windows account that you're logged in to) or Everyone's Documents And Settings. These options will back up a variety of information associated with a Windows profile, including files saved to My Documents or on the Desktop. (You can also opt to back up All Information On This Computer, which we'll discuss later.)

You should choose the last option, Let Me Choose What To Back Up, if you keep any important data

saved in nonstandard locations (for example, a folder outside My Documents). This option is also useful when you don't want to back up all the files in a given location.

After you've decided what to back up, decide where to save your backed up data. Select from the Choose A Place To Save Your Backup drop-down menu or click the Browse button to specify another location.

The best place to put backups is an external hard drive, such as the kind that connects to your system via USB or FireWire. Another option is to use a network folder if one's available. You can also store backups on a USB flash memory drive, but because they have very limited capacity compared to hard drives, they only make sense when you're not trying to back up a large amount of data. Backup won't let you burn backups to a writeable CD or DVD.

Another shortcoming of Backup is that it doesn't compare the amount of data you're trying to back up to the available storage on your target drive before beginning the backup, so it will end prematurely if you run out of space. Therefore, make sure you have enough free space before starting your backup.

Note that, in a pinch, you can save backups to an internal hard drive, including the same one that contains

The Backup Or Restore Wizard simplifies the process of setting up backups or restores.
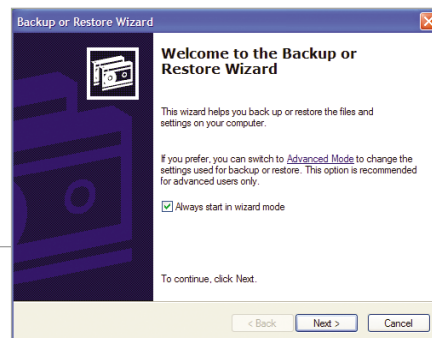
the original files you want to protect. Of course, this route provides only limited protection for your data.

The wizard will present you with a list of the choices you've made. Click Finish to immediately start the backup, or further customize your backup by clicking Advanced.

Advanced Options

The first step under Advanced Options is to determine the type of backup you want to perform. Under Type Of Backup, the default option is Normal, which backs up all the files you've selected. You can also choose to perform Differential or Incremental backups, which save time and space by only backing up new or recently changed files. However, these can make restores complicated and are

most appropriate for businesses that conduct daily backups. Click Next when you've made your selection.

On the How To Back Up dialog box, select Verify Data After Backup. Although this will increase the amount of time needed to complete the backup, it will ensure that the backup you create is readable and can actually be restored. You also should be sure to leave the Disable Volume Shadow Copy box deselected, as this allows files to be backed up even while they're in use.

Next is Backup Options, where the default setting is Append This Backup To Existing Backups. This means that new backups will not overwrite any already saved, which is the preferred choice if you have lots of available storage and want to retain multiple versions of your backed up files that go back days, weeks, or perhaps months. If, on the other hand, you have limited storage space and are content to have only the most recent copy of all your files, select Replace The Existing Backups.

Finally is the When To Back Up screen. The default option is Now, but you can also schedule your backup to take place later by clicking Later and Set Schedule. This will bring up the Schedule Job dialog box. If you want your backup to be performed on a regular basis, change the Schedule Task setting from Once to Daily, Weekly, or Monthly and adjust the schedule accordingly.

Keep in mind that while a backup is in progress your computer will probably run more slowly than normal, so if you leave your computer on 24/7, it's best to have backups take place in the wee hours of the morning or any time you know the computer won't be in use. Also check to make sure that your backup doesn't conflict with other scheduled events such as antivirus or spyware scans, because running both at the same time might cause problems.

Once you're finished configuring the Advanced options, click Finish.

Automated System Recovery

We've seen how to use Backup to safeguard your data, but if you want to protect an entire system against failure, you may be able to use a feature called ASR (Automated System Recovery).

ASR works by saving your Windows Registry and other system configuration information to a floppy diskette. You can then use this diskette along with your original OS CD to restore not just data, but your applications and settings, too.

ASR comes with a catch, though. Although you'll find its menu option present within Backup for all versions of WinXP, ASR doesn't actually work for

WinXP Home Edition (even though it will appear to work if you try to perform an ASR backup). Therefore, the following procedure applies only to WinXP Professional or Media Center Edition.

To perform an ASR backup, choose All Information On This Computer when configuring your backup. After a short wizard, the backup will immediately begin, and once it's complete, you'll be prompted to insert a diskette to hold the ASR data. Label the disk and store it in a safe place.

Restoring Backups

To restore data you've backed up, run the Backup as you did above but select Restore Files Or Settings. The wizard will prompt you to provide the location and name of the backup file you want to restore. (Backups are saved as a single file with a .BKF extension.)

Before beginning the restore process, you can click the Advanced button again to specify advanced options such
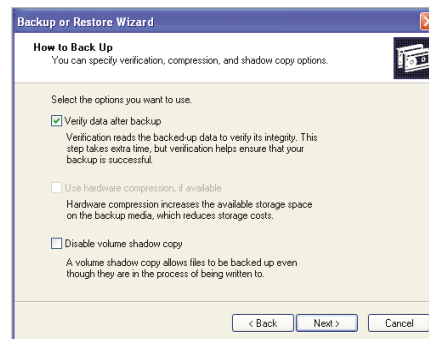
It's best to verify backups to make sure you'll actually be able to use them if needed.

as where to restore files and whether to overwrite existing files with the same name. The restore will begin once you complete the wizard and click Finish.

To restore an ASR backup, start your system with your WinXP CD-ROM—be sure the system is set to boot from the CD and not the hard drive—and press F2 as soon as you see Press F2 To Run Automated System Recovery (ASR) at the bottom of the screen. You'll see the F2 prompt within a few seconds of starting the system; if you miss it, reboot the system and try again.

Insert the ASR diskette when prompted to, and the system will format your C: drive and start a special mode of the Windows installation. You'll be asked to confirm the location of your backup file. After the restore process completes and your system reboots, it should be back up and running, good as new. ∎
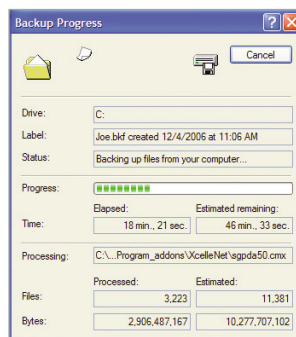
A progress dialog box will let you know approximately how long the backup will take.

by Joseph Moran

Windows Live OneCare

Threats to your PC's security abound. Almost daily, we hear of new viruses, worms, and Trojan horses, not to mention keyloggers, adware, spyware, and various other types of malware. Malicious code is designed to produce a broad spectrum of results, from minor inconveniences to wiping out data on your computer, stealing your personal information, or turning your computer into a zombie to be used to disrupt service on other computers, Web sites, and networks.

Although Microsoft has been harshly criticized for years for failing to adequately protect its Windows OSes (operating systems), even security firms themselves have been victimized by crackers. In December 2006, the Big Yellow worm made a brief appearance by exploiting a hole in Symantec's own code. The flaw in Symantec's Client Security and AntiVirus Corporate

The System Check lets you know what firewall and/or antivirus programs you'll need to remove before installing Live OneCare.

Edition, which doesn't affect NAV (Norton AntiVirus) users, is easily patched on vulnerable computers when users update their software; Symantec was aware of the worm and released a patch in May 2006.

Who Targets No. 2?

Because Windows OSes and the software used on them are ubiquitous, they're vulnerable. Malicious code writers set their sights on these products to affect the

greatest potential number of users. According to *The Wall Street Journal*, for instance, Symantec had a 61.8% share of the security software market in November 2006, compared to Trend Micro's 10.6% and McAfee's 9.3%.

Natalya Kaspersky, CEO of Kaspersky Lab, a Microsoft competitor in the antivirus software arena, said in a recent article that virus writers will continue to dog Microsoft's OSes and Office applications because most computer users are still using these products. For this reason, Kaspersky also believes Live OneCare will be no different; it, too, will be the target of crackers who will write malicious code specifically to dodge detection by Live OneCare.

The security of Windows OSes has, up until now, been left to third-party vendors, such as Symantec, McAfee, Kaspersky, and Trend Micro. Microsoft has sent out patches and updates to close security holes in its OSes, and for many users, that falls short of the protection they expect, and Microsoft has come under increasing fire to shore up the safety of its OSes.

With its Live OneCare (www.windowsonecare.com), Microsoft has wrapped security features and utilities into a $49.95 yearly subscription package, and the license permits you to install the program on up to three PCs. Before you download the software, you'll be asked to create an account, including an ID. If you intend to install Live OneCare on more than one computer, you need to use the same ID you used to create your account.

Installation Requirements

Theoretically, you should *not* be able to install Live OneCare if you lack the necessary system requirements or if you have other antivirus software on your computer. Just before downloading, you'll be prompted to run a program called System Check, which scans your computer and makes sure it can support Live OneCare.

At a minimum, you'll need a PC running Windows XP (Home, Pro, Media Center, or Tablet PC) with Service Pack 2 installed or Windows Vista; Internet Explorer 6 or 7 for WinXP SP2; a 300MHz or higher CPU; 256MB of RAM; 550MB of available hard drive space; 56Kbps (kilobits per second) or faster Internet connection, although Microsoft highly recommends a broadband connection; and an internal CD or DVD

drive that's capable of burning discs or an external hard drive. Although Microsoft says the final requirement isn't necessary to download Live OneCare, you'll need it to use the Backup and Restore components of the program.

Know, too, that if you download Live OneCare via a dial-up connection, it'll take at least 90 minutes. You can buy Live OneCare v.1.5 on CD at most retail and online outlets that carry software. The v.1.5 CDs are compatible with WinXP SP2 and Windows Vista; previous versions are compatible with WinXP SP2 only.

Follow the prompts to install System Check and carefully read the information at each step. If you lack adequate resources, you'll be apprised of the situation and advised not to install Live OneCare.

If you meet the system requirements, System Check first identifies any third-party firewalls on your PC and prompts you to let the program remove them. Don't continue unless you have time to uninstall the firewall and any antivirus programs currently protecting your system and download and install Live OneCare; otherwise, you may leave your computer unprotected, particularly if you have an always-on broadband Internet connection.

Live OneCare bundles security and maintenance in one package.

As you are downloading and installing Live OneCare, Windows automatically activates its Firewall component so you have temporary protection against intrusions.

Known Conflicts

As is the case with competitors Symantec NAV and McAfee, Live OneCare is incompatible with other antivirus programs, and if you attempt to install Live OneCare on a computer already running an antivirus program, you may render your computer inoperable. Users have complained in the Live OneCare forums that they've had problems even when they removed NAV prior to installing Live OneCare. The Microsoft forum moderators recommend running the Norton Removal Tool found at this Symantec site (service1.symantec.com /SUPPORT/tsgeninfo.nsf/docid/2005033108162039) to remove the program and all of its remnants prior to installing Live OneCare. Be forewarned: Using this tool completely removes all Norton products (2007 back to 2003) from your computer, and if you ever plan to reinstall NAV, you'll need the installation CDs to do so.

Microsoft recommends checking Add Or Remove Programs (in WinXP, click Start, Control Panel, and Add Or Remove Programs) for other antivirus programs before installing Live OneCare. Techs in the forum suggest that users who've run other major antivirus programs, such as McAfee, Trend Micro, AVG, and Avast, visit the product's Web site and run the removal tool designed for that program to remove all vestiges of it prior to downloading or installing Live OneCare.

Part & Parcel

For the price of a yearly subscription to Live OneCare, you'll get antispyware and antivirus components, a firewall, backup and restore functions, and utilities that'll help you keep your PC running efficiently.

In the Live OneCare window, you'll see a list of Common Tasks in the left pane and system status reports, as well as any recommended actions to take, in the right pane. Although you can schedule times to run most of the components, you can also manually select any of the Common Tasks, such as Scan For Viruses, any time you suspect there's a problem.

Antispyware. Spyware is undesirable because it tracks your online behavior without your knowledge or permission. For instance, it may log the number of times you've visited certain Web sites and report that activity to advertisers. WinXP SP2 users have been able to avail themselves of Windows Defender, the antispyware component of Live OneCare, since October 2006. If you've upgraded to the most recent Windows OS, Vista, you've probably noticed that Windows Defender is an integrated component in that OS, as well.

You can customize Windows Defender to operate in real time. In this mode, it scans a number of programs, including those set to run automatically when you start your computer and when you open Internet Explorer. If you'd prefer less intrusive protection, set Windows Defender to run at specific times and have it prompt you before quarantining and/or removing known spyware and alert you to suspicious software and activity.

For more information on Windows Defender, including how to install it as standalone antispyware without the entire Live OneCare program, see "Defend Windows XP With Windows Defender" in our February 2007 issue of *Smart Computing* or visit the Windows Defender Web site (www.windowsdefender.com).

Protection Plus. Here's where you'll find the antivirus and firewall components of the program. Preventing viruses and malicious code from wreaking havoc on your PCs is one of the most basic reasons to have antivirus software, and preventing your PCs from spreading the viruses to other users is an equally important reason. Live OneCare not only monitors the activities that make your
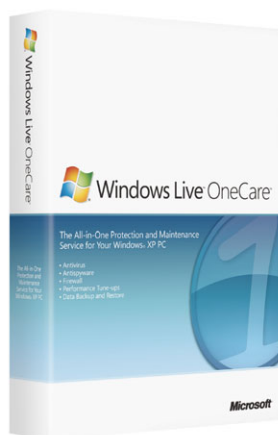
own computer vulnerable, such as when you install a program a friend burned to a DVD for you or when you download an add-on from an unfamiliar Web site, but also it monitors and blocks suspicious activities that could pose threats to other users, such as when a picture file attempts to access the Internet.

The antivirus component runs constantly in the background, scanning files, emails, downloads, and anything else you introduce to your computer (for instance, a DVD or flash drive full of holiday pictures of your grandchildren that your daughter-in-law sent you) for known viruses and suspicious behavior. If Live OneCare locates an infected file, it'll pop up a window on your Desktop and list several options, including quarantine or destroy. Although we've read that some Live OneCare beta users found the interface cumbersome, we appreciated all of the information and options it gave us. For those of you who are more comfortable letting the program decide what to do with infected files, look in the upper-left corner for Actions To Take and follow the prompts.

The firewall component is also a part of the Protection Plus feature, and you'll have more configuration settings and options than you had with the firewall that was bundled with WinXP. This two-way gateway prevents crackers from accessing your computer and the data on it, and if for some reason a Trojan horse or worm has managed to find its way onto your computer, the firewall prevents the intruder from sending your personal information from your computer, too. Fortunately, because we didn't have any worms on our system, we weren't able to test the efficacy of this feature.

Plenty of users reported, however, that they experienced slow-loading Web sites or timed-out Internet connections if they had another software firewall on their systems. Microsoft recommends that you not run two or more firewalls on your system simultaneously.

Performance Plus. This feature bundles utilities that defragment your hard drive and weed out obsolete files and folders. Also known as Tune-up, this feature connects automatically to Microsoft Update to make sure your computer has the latest available security updates, and it also regularly backs up your system to CD or DVD or an external hard drive.

We especially liked having off-system storage for the system backups. Although we used System Restore on WinXP a few times, it feels more secure to have a backup of all of our data and important files separate from the system itself. We also appreciated the feature that let us schedule regular backups. If you're more hands-on and want to run the full or incremental backups yourself, you may, and Tune-up will notify you of important system, hardware, or file changes that may warrant a backup.

After installing Live OneCare, you'll need to leave your computer on the first night. Tune-up runs at 1 a.m. after installation and every four weeks thereafter. You can schedule Tune-up for a time that's more convenient, but you will need to leave the system on so make sure you schedule a time you won't need to access your computer.

System Status

As with many antivirus programs, Live OneCare puts an icon in the System Tray so you know the program is running, and the icon changes color to indicate the status of protection. A white No. 1 in a green circle lets you know your system is protected.

If the circle turns yellow, your system is still safe, but you may need to run Tune-up. If the circle turns red (and it will if you turn off the firewall or antivirus components), your system is somehow at risk. Right-click the icon and select Open to see what actions are recommended. If you have a dial-up connection, you may see a
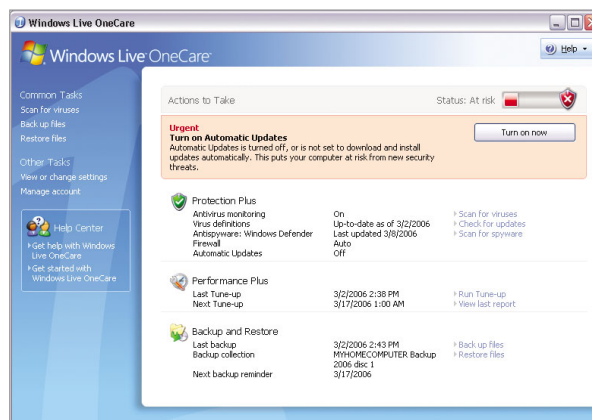
When the Live OneCare icon in the System Tray turns yellow or red, open the Live OneCare window and see what actions it recommends.

red icon when the antivirus scan needs to go online to check for new virus definitions.

If you make changes to your system, such as installing hardware or software, and don't run a backup, the icon will turn red after a few days. We installed software to help us with our taxes, but we didn't run a backup for about two weeks, and the icon turned an angry red to remind us of our folly.

We didn't encounter problems installing or running Live OneCare, although if you do, click the Help And Support link in the Live OneCare window and select Email or Phone Support. We also found the Windows Live OneCare Forums helpful, although as with most places that preserve anonymity, you'll find a few grumps spouting off, but mostly, the posts and responses are informative and helpful. ▐▌

BY KATHRYN DOLAN

Open-Source Programs vs. Fee-Based Applications

How Do They Stack Up?

While computer hardware prices have plummeted over the past few years, the cost of many popular programs has soared to all-time highs. But you may not need to open your wallet to get the benefits offered by many high-end software suites. In fact, a savvy consumer could save as much as $2,000 by selecting comparable open-source programs instead of buying the name-brand titles.

Open source is a term that refers to applications that are created by individuals or teams of individuals and distributed freely on the Internet. While open-source software is similar to freeware, it differs in that the license allows any users who happen to be programmers to freely add to or modify the program as they see fit.

We found that there were hundreds of open-source programs available on the Internet, so for comparison purposes we selected four programs that appeared to compete directly with fee-based software titles. In this article, we will examine open-source counterparts to Microsoft Office, Adobe Photoshop CS2, Adobe Audition 2.0, and Microsoft Publisher to find out if they really measure up.

OpenOffice 2.0 vs. Microsoft Office

OpenOffice, available at www .openoffice.org, is an open-source productivity suite that was designed to compete directly with Microsoft Office Professional ($499; office .microsoft.com). It includes a word processor (comparable to Word), a spreadsheet component (comparable to Excel), and a presentation suite (comparable to PowerPoint).

Downloading the 93MB Open-Office installer took a few minutes over a high-speed connection; it is significantly faster than the multi-CD installation of Microsoft Office Professional. The installer asked us if we wanted to open all office documents with OpenOffice but did not default to these options. It even included a section that explains that you probably do not want to associate Microsoft Office files with OpenOffice if you are just trying the product out.

OpenOffice Writer. The word processor in the OpenOffice suite is called Writer. At first glance, Writer looks nearly identical to Word, which makes the program easy to grasp for long-time Microsoft Word users.

Pros. The position of menu options and toolbar buttons closely resembles its Microsoft counterpart, and all toolbar buttons are clean and representative of their respective functions.

Just like Word, Writer is equipped with a real-time spell checker that underlines misspelled words and provides a right-click interface to make suggested corrections. The open-source word processor also has drawing features similar to those offered by Word.

Cons. When saving a document in Writer, OpenOffice defaults the document type to an OpenDocument Text file format (with an .ODT extension). These files will not open directly in Word, so if you plan to share documents with others who do not have OpenOffice installed, you will need to select the Save As option from the File menu and choose a Microsoft Word format from the drop-down list.

Writer does not have the grammar-checking options that come standard with Word. Students using Writer in an

Audacity is an open-source program that allows users to record, edit, and mix audio files.

background selections for presentation slides will be disappointed with the meager choice of two default backgrounds that come with Impress.

Conclusions. OpenOffice 2.0 is a viable alternative for the budget-conscious user who is familiar with Microsoft Office. Recent updates included with version 2.0 make the suite feel comfortable to the Microsoft Office user. Unless you are a high-octane Microsoft Excel or PowerPoint user, OpenOffice can save you nearly $500.

Gimpshop vs. Adobe Photoshop CS2

Over the past 10 years, Adobe Photoshop ($649; www.adobe.com /products/photoshop) has been considered the Holy Grail of photographic manipulation software by professionals and amateurs alike. While there are many low-cost alternatives to Photoshop, few offer the brushes, features, and capabilities that Photoshop lovers have come to rely on.

With that said, open-source developers are hot on Adobe's heels with the latest version of Gimpshop (www .plasticbugs.com). Gimpshop is the latest variant of the GIMP open-source image manipulation program. Gimpshop puts a Photoshop-like interface on the old GIMP application to help Photoshop users feel more comfortable using the open-source program.

academic environment may lose a few more grammar points on their homework than their Microsoft-using friends.

OpenOffice Calc. The spreadsheet component in the OpenOffice suite is called Calc, which is closely styled after Microsoft's Excel.

Pros. Calc recognizes almost all Microsoft Excel formulas, making it a viable alternative for the casual or small-business spreadsheet user who needs to plan an event or do some light accounting work.

If you print to PDF (Portable Document Format) frequently, you will find Calc's direct support for PDF printing handy. The File menu contains a simple Print To PDF command that allows you to create PDF documents without the need for Adobe Acrobat Professional or other related products.

Cons. If you email spreadsheets back and forth regularly to others, you may find it a little annoying that you cannot open a read-only spreadsheet without saving it first. If someone sends you a Calc spreadsheet as an attachment, you must first save it to another location (for example, your Desktop) and then open it from there.

Also, advanced Excel users may become frustrated with Calc's lack of

We found Audacity's multitude of effects and features comparable to Adobe's high-end Audition 2.0 software (formerly Cool Edit Pro 2.0).

support for some advanced spreadsheet commands and functions. For instance, if you are using Excel as a replacement for Intuit's QuickBooks (quickbooks.intuit.com) in your business, Calc may not be for you.

OpenOffice Impress. OpenOffice's answer to Microsoft's PowerPoint is called Impress. When you open Impress for the first time, you are greeted with a clean wizard interface to help you start your presentation or open an existing presentation.

Pros. Impress allows you to open presentations created in Microsoft PowerPoint, make changes to the presentation, and then resave it again. This is a handy feature for the cash-strapped student who needs to view a professor's classroom notes or create a presentation but can't afford PowerPoint.

Cons. While Impress is great for opening and modifying existing presentations, it proved itself to be the least stable component of the Open-Office suite in our tests. Each time we attempted to create a new presentation and add a background effect using the handy wizard, Impress crashed completely. We made two identical attempts and ended with the same results.

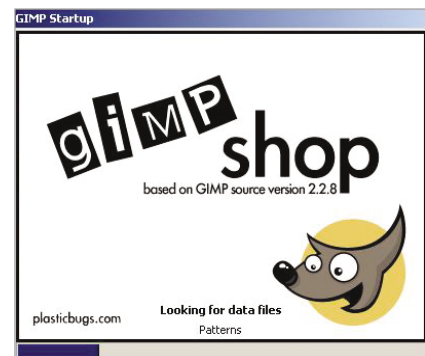In addition, PowerPoint users who are used to a wide variety of

Gimpshop is an open-source application similar to Adobe's Photoshop programs that allows you to edit graphics and images.

Using Gimpshop, we were easily able to open an existing image, edit it, resize it, and save it again.

Pros. The download and installation sequence for Gimpshop was pretty straightforward and fast—less than two minutes from download to use. We found it fairly simple to open a picture, make basic photographic changes to its elements, resize it, and save it again.

Cons. Gimpshop's toolbars and buttons are similarly oriented to those in Photoshop, but the buttons' appearance does differ significantly from those in Photoshop. For example, it took us a minute or two to find the Crop button because it looks like a knife in Gimpshop. Needless to say, there is a slight learning curve to Gimpshop, even for those familiar with graphic-editing software.

Another major difference that will throw long-time Photoshop users a curveball is the double menu structure. Clicking the File command in the top-left corner only reveals an Exit option. The usual Open, Save, and Save As functions are located in a second-tier File menu.

Conclusions. Gimpshop is a good alternative for the casual home photographer, but it may not satisfy the demands of the professional or aspiring photographer. If you are simply trying your hand at the craft, we would recommend giving Gimpshop a chance. It will save you the $650 you'd spend for Photoshop CS2 until you know you need (and are ready for) the horsepower.

Scribus vs. Microsoft Publisher

The desire to create and print homemade banners, greeting cards, signs, newsletters, and brochures dates back to the days of the Apple IIe computer. Desktop publishing software has come a long way since then, and one of the industry leaders is Microsoft Publisher ($169; office.microsoft.com/publisher).

Until recently, there was not an open-source alternative to Microsoft Publisher. Scribus (www.scribus.net) is a little-known newcomer on the open-source scene that offers Publisher-like desktop and template publishing.

However, the installation instructions for Scribus were as complicated as assembling a bicycle on Christmas night. The software is still in beta mode (meaning it's still being tested and not yet permanent), and there are different installation instructions based on different versions of Windows. We had to install a secondary piece of open-source software to ensure Scribus would be able to print properly. There were also warnings about problems with custom fonts and a promise that code improvements are being made daily.

Pros. We were immediately impressed with the sleek look of the loading screen as the program made an initial cache of our fonts and prepared to run. Once it loaded completely, we were greeted by a thorough wizard to assist us in developing a new publication.

It was also very handy to have a single button on the toolbar that allowed us to save our publication as a PDF file without the need for any additional third-party software.

We also got a kick out of playing with the calendar script that allowed us to create a single month or multi-month calendar with custom layouts. This would be a very handy tool for the amateur photographer who wishes to make a custom calendar at home using personal photos.

Cons. We cannot stress enough what a hurdle it was to get Scribus installed. Although the instructions were thorough and accurate, they need to be followed precisely in order for the program to install.
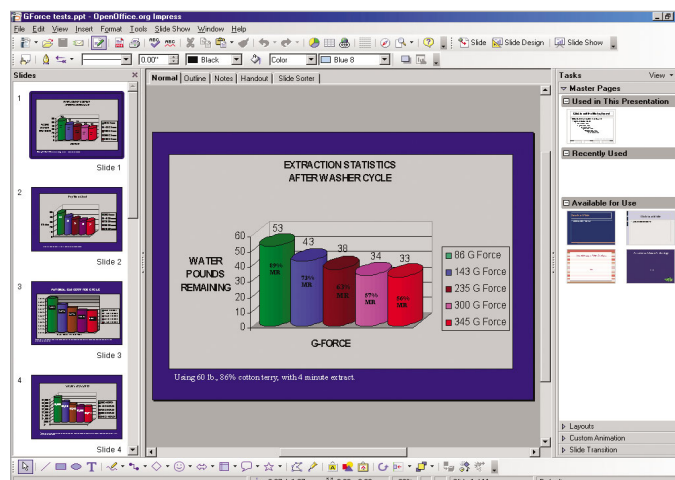
Impress is an open-source component of OpenOffice that allows users to create new slideshows and to open and edit existing Microsoft PowerPoint presentations.

Another drawback is the severe shortage of templates to select from. There were only five templates available as compared to the hundreds of templates available in Publisher 2003. While some may prefer to create their own publication from scratch, sometimes having an example to work from can be helpful.

We mentioned that we liked the calendar creation script that comes with the Scribus package; however, placing an image on the top fold of the calendar might be a challenge for the novice user. Unlike Publisher, photos and images cannot be easily adjusted by clicking a corner and dragging the frame to the desired size. In Scribus, images must be sized before they are imported. Also, it is interesting to note that while Scribus supports GIMP for editing photos on the fly, it does not support Gimpshop.

Conclusions. While Scribus has potential, it is not ready for prime time yet. The installation difficulty coupled with a lack of templates makes Scribus a challenge to use effectively. In this case, we recommend using the fee-based software, Microsoft Publisher.

Audacity vs. Adobe Audition 2.0

While Windows XP comes with Windows Movie Maker for basic movie editing, users who want to mix or edit their audio files need third-party software to do so.

Adobe purchased Cool Edit Pro 2.0 from Syntrillion Software and renamed it Adobe Audition ($349; www.adobe.com/products/audition). We were very interested to see if there was any open-source software that could come close to matching this long-time audio powerhouse.

The only real contender in the open-source community that we could find is a program called Audacity (audacity.sourceforge.net). The program installed smoothly and launched in about the same amount of time as Adobe Audition.

The similar look, layout, and functionality of the toolbar buttons in OpenOffice's Writer word processor should make Microsoft Word users feel right at home.

Pros. Audacity allows multitrack recording from multiple input sources and is jam-packed with effects such as cross fading, noise reduction, and echo. Importing existing audio from MP3 format was very easy, and the audio quality of playback was superb.

Like Audition's wave editing feature, Audacity allows you to zoom in on a particular snippet of audio within a track for up-close editing. A simple zoom out command returns the user to the original track view. Once the audio is perfectly polished, it can be saved in MP3, WAV, or

Users who are accustomed to Microsoft Publisher's rich library of templates and examples may find Scribus' meager selection of five templates lacking.

the program's proprietary AUP file format.

Cons. Audacity requires the user to select Add A New Track from the Project menu each time the project demands an additional track. By comparison, Adobe Audition has a large number of empty tracks that are open by default, saving the user a few mouse clicks here and there. There is no keyboard shortcut to add a new track in Audacity, and to the audio professional, it will seem unnecessarily laborious to require two mouse clicks to add a new track.

Conclusions. We were very impressed with the simplicity and intuitive operation Audacity offered. In many ways, it was easier to use than Adobe Audition.

We would feel extremely comfortable recommending Audacity, as it will probably meet your audio recording, mixing, and production needs while saving the $349 you would have spent on Adobe Audition. Even advanced recording buffs should find Audacity an asset in any home recording studio.

While this article focuses on the savings offered by open-source software, many computer users have saved considerable amounts of money by selecting free versions of commercial applications. Applications such as the ZoneAlarm free firewall (www.zonelabs.com) or Lavasoft's spyware removal utility, Ad-Aware SE Personal (www.lavasoft.com), offer alternatives to open-source software for the price-conscious consumer and should be investigated, as well.

Spare Your Wallet

There are literally hundreds of free or inexpensive programs available on the Internet covering just about any purpose you can imagine. While many still have some room for improvement, our review found that, in many cases, these applications are viable enough to save a user hundreds, if not thousands, of dollars in unnecessary software purchases.

Before you make your next high-dollar software purchase, you might want to do a quick search for an open-source or other freeware alternative. Your wallet will thank you. ▐▌

BY THOR SCHROCK

READERS' TIPS

Helpful Advice & Solutions From Our Readers

Add Info To Files

Would you like to be able to add more information to a file than you can include in the file name? If you use WinXP, you can. First, right-click the file, then select Properties. On the General tab, uncheck Read Only. Select the Summary tab and enter as much information as you want in the Comment or other fields; place an asterisk at the far left of the Title field. (You'll see why in a moment.) You can then identify these annotated files in a folder if you use Detail View for that folder and add a Title column. To add a column to most Windows folders, right-click a blank space next to a column title. Check Title. A new Title column will display to the right of your last column. Drag the right edge of the column line to the left so that only one or two characters will display. Now the asterisk you added will display on the left edge of the Title block.

GIL H., CINNAMINSON, NJ
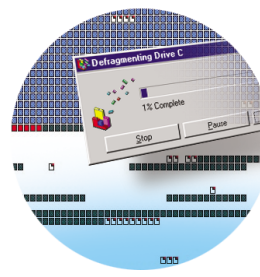
Fast Defragment In Win98

WinMe's defragmenter is faster and more thorough than Win98's. To use the newer utility in Win98, download the file Medefrag.exe and place it in your Windows folder. (You can use Google to find a downloadable copy of the file, if you don't have one. Be sure to scan the downloaded file for viruses and other malware before using it.) Rename the existing Defrag.exe to Defrag.old, and then place the new file in your Windows folder. You can now use Me's version of Defrag any time you like. (If you don't care for it, or if you run into other problems, just delete it and rename Defrag.old back to Defrag.exe.)

DAVID C., ALEXANDER, ME

Check Your Drive & System Status

Your recent (October 2006) article advised readers to right-click a drive and then select Properties in order to see how a drive is being utilized. Your readers might be interested in knowing about Belarc Advisor (www.belarc.com/free_download.html). I'm assuming you're aware of this free little program, but I think it's a great one to use if you'd like to see a profile of your computer. Best practice (and I don't always practice what I preach!) is to run a new profile and print it off every time you make a change to your PC. Then store the printout someplace where you can find it, in case your PC goes down and you need to tell a technician what's on it.

KAREN B., LOUDON, TENN.

Don't get mad, get **Tech Support** SmartComputing
(800) 368-8304
webhelp@smartcomputing.com

How Green Is Your PC?

E-Waste Solutions Lag Behind Production

In technology years, it's been eons since the first personal computer debuted and changed forever the way we all work and play. Since then, a staggering number of computers have found their way into homes and offices, and given the rate of improvements, many units are becoming obsolete at a pace that matches the rate of innovation. So, what happens to obsolete PCs?

Hard numbers are elusive, but some industry watchers have compiled estimates. Gartner Research Vice President Frances Obrien cited data projecting that between the years 2006 and 2010, roughly 925 million PCs will be replaced worldwide. About 73% of those will be "discarded in landfills or stored, while only 27% are recycled," according to Obrien.

A scan of industry stakeholders indicates that even the most informed organizations are only beginning to track and influence where discarded technology components will end up.

The Computer Industry's Response

So, are computer companies taking back significant numbers of computers? Are they effectively recycling components?

We contacted nine leading computer firms to ask about their policies on old computers and monitors. Of those we contacted, Dell, Fujitsu, Gateway, HP, Lenovo, and Sony agreed to speak to us about recycling-related issues. Acer and Apple reps declined to participate. Toshiba didn't reply.

Responses to our queries (summarized in the "Company E-Waste Policies" sidebar) show that five of the six responding firms have established policy statements regarding computer take-backs, and all six will take back computers under some circumstances.

Dell's is one of the more permissive recapture programs. For consumers, the company offers free recycling of Dell brand products at any time and other brands with a purchase from Dell. The program includes home pick up for consumers. For business and institutional customers, Dell's program includes pick up or shipping from customer locations and data wipes of recovered computers.

Sony's program covers laptop computers only. The company offers free shipping and accepts used laptops from any manufacturer with the sale of a new Sony laptop.

Gateway offers professional customers two fee-based services, asset recycling and value recovery. Asset recovery is environmentally responsible recycling for obsolete information technology. Value recovery credits the value of the recovered equipment to the customer's account; that credit can be used toward future Gateway purchases.

All of the responding firms said they will accept discarded technology manufactured by other companies under some circumstances.

Dell, Gateway, and HP have formal technology recycling programs in place. Lenovo, which purchased IBM's computer business in 2006, indicated that the firm is seeking legislation to formalize and prescribe aspects of the recapture of discarded tech equipment. Currently, Lenovo allows consumers and business customers to recycle any manufacturer's PCs, including system units, monitors, printers, and optional attachments, for $30, shipping included. In the past year, Lenovo has participated in take-back schemes, according to the company Web site, and is evaluating future commitments.

The firms' responses indicate that serious e-waste management is at an early stage, with much remaining to be defined. When asked to estimate the percentage of their own technology currently being recaptured, only HP was able to provide a numerical response: 10.3% of sales.

Trade Associations & Industry Watchers

While the issues are unsettled, there is no shortage of stakeholders in many

quarters, all interested in finding a solution to a growing e-waste challenge. Manufacturers, retailers, recyclers, legislators, the EPA, and concerned citizens are all in the mix, with some interests primarily economic and others centering on environmental issues.

Consumer Electronics Association

The CEA (Consumer Electronics Association; www.ce.org) represents over 2,100 retailers, wholesalers, and manufacturers. Spokesperson Kristie Taylor said CEA is currently lobbying Congress for legislation to get a systematic handle on e-waste management.

Two competing positions have emerged. CEA and the majority of its members favor laws creating an advance recycling fee to be paid at the time of purchase, similar to programs used for automotive batteries. A different approach, establishing a direct take-back program to be executed by computer manufacturers, is favored by some computer firms.

Four states have recently enacted different laws covering e-waste disposal. Disparity in the laws suggests

Americans are storing large numbers of unused computer components that are candidates for landfills.
(Photo credit: Nebraska Department of Environmental Quality)

an emerging patchwork approach that could result from state-level solutions. Taylor says that CEA favors a more uniform approach, noting, "It's a national problem that requires a national solution."

Trade Magazine

Industry watcher Jerry Powell is publisher of *E-Scrap News* in Portland, Ore. This fall, his company sponsored

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Recycling Resources

The following sites serve consumers wishing to find nearby recyclers and related information.

The Consumer Electronics Association launched a new site in January 2007, featuring ZIP code lookup for consumers who want to recycle in the United States and Canada. See myGreenElectronics.org.

The Environmental Protection Agency site matches consumers with organizations in need of donated computers. See www.epa.gov/epaoswer/hazwaste /recycle/ecycling/donate.htm.

The Earth.911 site shows recyclers near you. See www.earth911.org.

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its fifth annual E-Scrap conference in Austin, Texas. The 2006 conference attracted 750 attendees from 15 countries, including major computer firms.

Like the CEA, he also favors a standard solution for the United States because, as he notes, "it will not happen voluntarily."

Powell stresses the potential for e-cycling. By his count, there are 1,027 for-profit e-cycling firms in operation in the United States and Canada. Old CRT (cathode ray tube) monitors are a problem because of lead used in the glass screens, but computer recyclers can extract small amounts of valuable metals, including gold, silver, palladium, and copper, suggesting that e-cycling can be profitable. He estimated that each ton of circuit boards contains 7 ounces of gold, and gold has recently been trading well above $600 per ounce.

Refurbishment represents an opportunity. A component that's obsolete for one user may be exactly what someone else needs. Powell says that over 70% of Americans store outdated electrical devices that are candidates for landfills; many of those devices could be refurbished and resold, contributing to the economy rather than being thrown away, possibly damaging the environment.

Ongoing Research

University of Florida. Dr. Tim Townsend, an associate professor at University of Florida's Department of Environmental Engineering, is a frequent speaker on e-waste. Some tech components definitely qualify as hazardous materials, but that's not the whole picture, according to Townsend. "Data indicates risks are not major" if landfills are operated properly. Lead used in CRT monitor screens and elsewhere is viewed as a risk by some, but "when we look at chemicals in landfills, lead remains fairly immobile . . . [it] will leach very slowly, if at all. Other environmental risks probably are greater than (component) disposal in landfills."

What about the sheer volume of computers and monitors potentially headed for landfills?

Sustainability is the real issue, says Townsend. "It doesn't make sense to dig up toxic materials, use them up, and then sprinkle them back into the biosphere. The science doesn't warrant scare tactics. I'm willing to pay [a fee] not to have it put in a landfill."

EPA (Environmental Protection Agency). While the EPA manages a host of environmental issues, the federal agency's mission doesn't extend to waste generated by households, a primary source of components that end up in landfills. Instead, individual states are charged with managing landfills within state boundaries.

According to EPA information officer Roxanne Smith, the EPA estimates that 2.6 million tons of e-waste was generated in 2005, with about 330,000 tons recaptured for recycling, or about 12.5% of the total for that year. The EPA estimates that about 1% of the total waste in landfills can be attributed to e-waste.

Gartner Research. Several Gartner Research reports point to a large and growing demand for used PCs in some quarters of the world. Gartner identifies the United States, Japan, and Western Europe as the main sources for used PCs. High-demand regions such as Eastern Europe, the Middle East, Africa, Latin America, and the Asia/Pacific region are hungry for technology discards. Export demand outstrips supply, especially for notebook PCs, one study reports. Another report estimates that the worldwide demand for used computers totals 130.7 million PCs, suggesting that U.S. tech discards may serve at least one additional duty station in their life cycles, perhaps on a desk in a foreign country, before being scrapped.

For Now, It's Up To Us

A large and growing number of discarded computers may be headed to landfills unless a systematic solution emerges. Until then, the most effective action open to individual consumers when it's time to dispose of old computers is to contact computer providers or recyclers to learn about green alternatives. See the "Recycling Resources" sidebar to find recyclers in your area. ▌▌

BY MICHAEL BORDER

Company E-Waste Policies

Computer manufacturers revealed varied progress and approaches to recapturing technology components from the e-waste stream. So far, the industry has not adopted a systematic approach to managing technology discards.

Company-Specific Issues	Acer	Apple	Dell	Fujitsu	Gateway	HP	Lenovo	Sony	Toshiba
Does your company have a stated policy regarding e-waste?	Declined	Declined	Yes	Not yet; initiating Jan. '07	Yes	Yes	Yes	Yes	Declined
Does your company solicit return of your units?	Declined	Declined	Yes—free	Yes	Yes	Yes	Yes, 1:1	Laptops only	Declined
Does your company solicit the return of other companies' units?	Declined	Declined	With Dell purchase	Yes	Yes	Yes	Yes, 1:1	Laptops only	Declined
Does your company offer incentives for recycling units?	Declined	Declined	At times, but not currently; first to offer own brand recycling, even without purchase	Unclear	Credit professional customers for future purchases	$50 if recycle any computer with purchase of HP	Establishing	Gift card for current market value of any trade-in	Declined
Does your company have a formal recycling program in place?	Declined	Declined	Yes	No	Yes	Yes	Seeking legislation	Laptops only	Declined
Does your company outsource its recycling to a U.S. firm?	Declined	Declined	Yes	N/A	Yes		Yes	Yes	Declined
Can you estimate the percentage of equipment recaptured?	Declined	Declined	N/A	N/A	N/A	10.3% of sales	N/A	N/A for U.S.	Declined
Do you have a racking program for disposal types?	Declined	Declined	Yes	N/A	Yes	Yes	No	Japan	Declined
What steps does your firm take to mitigate e-waste?	Declined	Declined	Reduce environmentally sensitive materials used in design	Striving to design to avoid waste	Zero landfill disposal, no incineration	Ongoing multifaceted program to reduce waste	Reduce environmentally sensitive materials used in design	Reduce waste, promote recycling	Declined

Learning Linux

Evolve Your Email Experience, Part I

I don't put much stock in a lot of the typical St. Patrick's Day traditions and lore, very likely because of the copious number of pinches I received as a wee laddie. I don't think four-leaf clovers are lucky, and you certainly won't catch me rooting around the forest for leprechauns and their respective pots o' gold. But before you brand me a St. Patty's Day scrooge, consider the *real* pot o' gold I bring you: Novell Evolution.

Maybe it's not enough that I've already shown you that Ubuntu is easy to install and use. Perhaps you need more than OpenOffice.org 2.0, the free, open-source alternative to Microsoft Office that, among many other things, lets you save your documents in formats that are compatible with Office's various programs. If you're someone who can live without Windows XP but not Outlook Express, Evolution may change your mind.

Evolution lets you manage your email, keep tabs on your busy schedule, and filter the piles of ubiquitous spam that seems to clog inboxes on a daily basis. Plus, I found

that Evolution is standard on most Linux distributions. And if there's one thing I like more than free software, it's free software I don't have to download and install myself.

The trickiest part about Evolution is setting it up for your email account. In fact, it's tricky enough that I'll spend this month configuring a Web-based email account to be ready for Evolution and next month actually using Evolution. To set up a Web-based email, I used my Gmail (www.gmail.com) account, but you should theoretically be able to configure Evolution for most Web-based email services, provided you know the right settings. By following my misadventures, you should be able to determine exactly what you need to find out before setting up Evolution yourself.

First, I configured my Gmail account to forward messages to Evolution. I opened a Web browser (Mozilla Firefox, of course; this *is* all about open-source), hopped over to Gmail, and signed in. Then I clicked Settings, which is located in the upper-right corner. On my Gmail account's Settings page, I clicked Forwarding And POP. I left the forwarding portion of these settings and focused on my Gmail account's POP (Post Office Protocol) settings. I clicked the radio button for Enable POP For All Mail, but you can also click Enable POP Only For

Mail That Arrives From Now On. It really just depends on whether you want to read your older emails in Evolution. By enabling POP, I essentially configured my Gmail account to grant access to Evolution.

Step two is important—it tells Gmail what to do with its copy of an email. If this makes about as much sense as Linux itself, think of it this way: If Bob Loblaw sends an email to my Gmail account, Google stores the email on its mail servers until I delete it. But when I set up Evolution to download the email, Google/Gmail needs to know what to do with the email that's still hanging out on its mail server. Gmail can do one of the following three things with an email once Evolution has downloaded it: keep the copy in your inbox, archive it, or delete it.

I prefer to keep a copy in my Gmail inbox in case I need to read an email again and I'm away from my computer. In the drop-down menu associated with step two, Keep Gmail's Copy In The Inbox—the option I wanted—was selected by default. I clicked Save Changes to finish preparing my Gmail account for Evolution.

The steps you need to take to configure your own email for Evolution will likely vary, but the options should be the same. The most important step in the process is enabling POP for the email you receive. Stop by next month when our Evolution escapades really become interesting. ▌▌

Gmail is one of the many Web-based email services that you can use with Evolution.

BY VINCE COGLEY
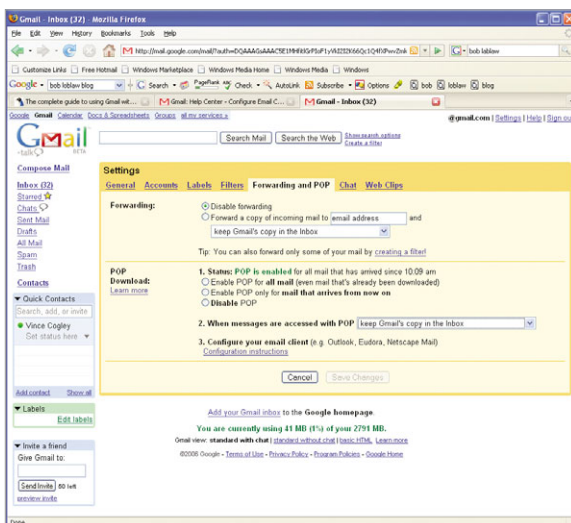
Look, Ma! No Cables

Wireless Routers Connect You To The Internet

Wireless home networking has become a commonplace occurrence, and wireless routers provide the glue that holds all of the components together. The technology involved in wireless networks offers high-speed transfer rates, improved security, and extended range. Yet, wireless routers have changed dramatically since their initial introduction. We'll help guide you through the different technologies so you can choose the wireless equipment that best matches your needs.

Behind The Scenes:
How Wireless Routers Work

Wireless routers act as traffic controllers for your network. Using a variety of radio frequencies, a wireless router communicates with a wireless network card in your notebook or desktop computer. Both the router and the network card utilize the same radio frequency, transmitting data back and forth as needed.

How is a router different from a WAP (wireless access point)? A WAP merely connects your computer to a network. It doesn't need to know how or where to send your data. A router is a WAP on steroids, able to determine where your data should be sent. For example, if you want to download a song from the Internet, your router knows to *route* the request for this song through your ISP's (Internet service provider) connection. Or, when you want to access a file stored on a computer in your basement, your router knows how to route the data between the two computers.

Instead of using physical cables, wireless networks use radio signals to transmit data to and from your computer. The transfer rate and range of these signals depend on the particular implementation chosen by a vendor. Most vendors are using a standard ratified by the IEEE under the 802.11 moniker.

Cozy Add-ons

In addition to fulfilling its primary role, many wireless routers also provide additional features that make your network safer and more useful, such as firewalls, switches, and print server functionality.

It's not unusual for a wireless router to include additional Ethernet ports to connect printers and computers that don't have wireless network cards. These built-in switches can give new life to older computers that can't accommodate wireless cards, or that don't need to be on a wireless portion of your network. Another valuable feature is a built-in firewall. Using a firewall on your router helps to protect the computers that use it for accessing the Internet. A router's firewall won't protect you from every security threat, but it's an excellent foundation for a secure network.

As part of a bundled firewall package, many wireless routers offer NAT (Network Address Translation) functionality. In addition to hiding your computer from the Internet, it also masks the number of computers working behind the wireless router. This is especially convenient when you use an ISP that limits you to one computer. With a NAT-capable wireless router, you can have an almost unlimited number of computers accessing your Internet connection. Depending on your requirements, you'll want to carefully examine what the vendors offer before selecting a wireless router.

Critical Features

Two main features drive the adoption of newer wireless systems: speed and range. The first widely available systems had transfer rates of up to 11Mbps (megabits per second) and ranges of up to 150 feet if you were indoors. Currently available systems promise up to 240Mbps at ranges as far as 1,000 feet.

Although it's hard to ignore the allure of a faster network connection, it's important to place network speed in context. If you're connecting to the Internet over a broadband ISP connection, you're probably limited to a maximum speed of 10Mbps or

less. This means that the speed bottleneck is your ISP, not your wireless connection. Purchasing a wireless router with speeds higher than your Internet connection won't yield a faster download.

However, if you have a home server or share files between computers in your wireless network, you will see faster transfers. Be forewarned: Just because a router has a peak capacity of 11Mbps doesn't mean you'll achieve that transfer rate. Real-world tests have shown that you can realistically expect about 50% of what the vendor promises. This is due to signal strength and interference, as well as some overhead in the network protocol used by the wireless router.

Wireless Router Implementations

There are currently two mainstream wireless networking implementations: 802.11b and 802.11g. The first of these to achieve widespread acceptance was 802.11b, operating over the 2.4GHz frequency and capable of up to 11Mbps under ideal conditions. 802.11b can operate at distances up to 300 feet (indoors), though the transfer rate drops as the distance between devices increases. Although the 802.11b standard is a bit dated, for many users its transfer rate is perfectly suitable.

Although 802.11b routers and wireless cards are still commonplace, a newer standard, 802.11g, is rapidly supplanting it. The principal advantage of 802.11g over the 802.11b standard is a higher transfer rate; 802.11g can operate at speeds of up to 54Mbps. The downside to 802.11g is a shorter range: 802.11g can reach approximately 100 feet.

You can use a mix of 802.11b and 802.11g devices in a wireless network, but the speed of the network will drop down to the 802.11b standard. This allows you to upgrade an existing network without having to replace all of your wireless components in one fell swoop.

If you don't want to wait for 802.11n equipment, Belkin's Wireless G Plus MIMO (Multiple Input/Multiple Output) router offers similar performance to 802.11n draft specifications.

Specialty Flavors

In addition to the two main wireless implementations, there are several additional ones that are either vendor customizations or standards that never achieved widespread adoption. Many of these will interoperate with the previously mentioned standards, but be sure to check with the vendor before purchasing.

802.11a. Although the 802.11a standard preceded 802.11g by several years, it never achieved the widespread success enjoyed by either 802.11b or 802.11g. 802.11a operates over the 5GHz frequency, with a transfer rate comparable to 802.11g's 54Mbps. 802.11a has roughly the same range as 802.11g (100 feet) but is more sensitive to interference from walls and other architectural components. Outside of a few early adopters who jumped at that speed increase over 802.11b, the 802.11a routers and other wireless equipment you'll find are dual systems that include either 802.11b or 802.11g in addition to the 802.11a components.

108G and G Plus MIMO. The 802.11 standard is devised by the
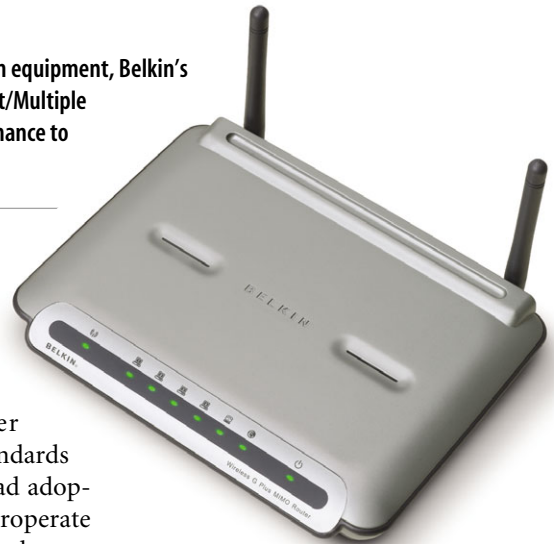
Bandwidth In Bits & Bytes

Network connections are usually rated in terms of bits (short for binary digit) per second. Most vendors will specify the transfer rate in either Mbps (megabits per second), or for wired networks, Gbps (gigabits per second). One megabit is equivalent to a little over 1 million bits, and one gigabit is roughly equivalent to 1 billion bits.

Bits are only useful as a relative term because most users don't think in terms of bits. A better alternative is the byte unit of measure. One byte is equal to eight bits, so to determine the amount of bytes transferred per second, divide the bits per second by eight:

- 1Mbps = 131,072 bytes (represented as 128KBps)
- 10Mbps = 1.25 megabytes (represented as 1.25MBps)
- 100Mbps = 12.5 megabytes (represented as 12.5MBps)

How large is a megabyte? If you're downloading music from the iTunes Music Store, for example, the average song is around 3MB. On a 1Mbps Internet connection, it would take approximately 24 seconds to download. On a very fast 10Mbps connection, it would take under three seconds to download.

Where the need for fast connections really comes into play is with video, both standard and high-definition. Your average DVD movie is between 5 and 8GB, which would take over an hour to download at 10Mbps. If you're streaming video across your home network through a wireless router, you'll appreciate the higher transfer speeds of the 802.11g specification. ∎

Using two antennas allows Netgear's Rangemax 240 Wireless Router to transmit data up to 240Mbps (megabits per second).

IEEE, but wireless vendors aren't required to hew to this standard. In an effort to boost the speed and range of their wireless offerings, many of these vendors have implemented alternative designs that attempt to leapfrog the current 802.11 standards.

The primary method of achieving higher transmission speeds and distances is by implementing MIMO (Multiple Input/Multiple Output) on network devices. MIMO uses two antennas to make simultaneous 802.11g connections. In theory this offers speeds of up to 108Mbps and ranges approaching 1,000 feet. Although the MIMO technique offers promise, there have been reports that these implementations can interfere with other wireless networks. When the standard is finally codified, 802.11n will replace these esoteric wireless implementations.

Compatibility

Although vendors try to ensure that your wireless components play nicely together, there are some fundamentals that need to be in place before you can mix and match components. Generally speaking, a router using 802.11b should work with any vendor's 802.11b network cards. The same is true for 802.11g and 802.11a.

On the other hand, mixing components can have serious performance implications, if they work at all. For example, 802.11g is backward compatible with 802.11b; you can use an 802.11g router with 802.11b network cards. But, the transfer rate will be 11Mbps. If you have an 802.11g router, one desktop with an 802.11b network card, and a notebook with an 802.11g card, both the desktop and notebook will transfer data at 11Mbps. The weakest (slowest) link determines the actual throughput.

Most of the MIMO systems are also backward compatible with 802.11b and 802.11g, but 802.11a is incompatible with almost all other 802.11 standards unless you have a dual-band wireless router.

No Strings Attached

Wireless routers are an affordable way to create a fast network without stringing cables throughout your home. With speeds that dwarf most Internet connections, the current standards provide robust networking wherever you want to use your computer. ▌

BY CHRIS JACKSON

802.11n: Not Ready For Prime Time?

In early 2004, the IEEE began to look into future amendments to the 802.11 standard. Titled 802.11n, the first new amendment seeks to establish a faster wireless specification aimed at superseding 802.11g. Although the IEEE ratification process has stalled recently, eventually the industry will settle on a ratified standard.

The mandate for 802.11n is to provide wireless connectivity with transfer rates at a minimum of 100Mbps, though vendors hope to achieve rates as high as 500Mbps. 802.11n uses MIMO (Multiple Input/ Multiple Output) dual-antenna technology to increase the number of transmissions between your computer and the wireless router. 802.11n is also supposed to coexist peacefully with existing 802.11 networks, as well as provide backward compatibility.

Like 802.11b and 802.11g, 802.11n is intended to function in the 2.4GHz radio spectrum. Instead of being limited to 20MHz channels, 802.11n will use 40MHz channels that increase the overall throughput.

802.11n is currently in "draft" status, which means the IEEE hasn't reached consensus on the exact specification. Despite this lack of consensus, several vendors are shipping wireless devices branded as "pre-N" or "draft-N." These vendors are hoping that the standard eventually ratified is close enough to the current draft status.

Purchasing 802.11n equipment prior to final ratification poses several risks. The primary risk is that early adopters will be stuck with incompatible equipment, a concern that some vendors are attempting to minimize. According to George Cravens of D-Link (www.dlink.com), "We will continue to provide free firmware upgrades to our customers as needed. We have extensive experience with product development while standards are being completed, and as with our previous generation 802.11g products, we are confident that our Draft 802.11n products will be fully compliant with the eventual 802.11n standard." The closer to the final ratification that you purchase your 802.11n equipment, the safer you'll be. ▌

WEB TIPS

Enhance Your Time Online

The Right Amount Of Paint

Problem: The last time I painted a room in our home, I overbought the paint and ended up with extra gallons. I want to use the remainder to paint another room, but I'm afraid there isn't quite enough left. How can I figure out the right amount?

Solution: The Interior Paint Calculator is what you need. It's one of a number of handy online tools on the Easy2DIY site (www .easy2diy.com). To find the paint calculator, go to Task and select Painting. Then click the How-To Tutorials tab and then the Interior Paint Calculator. Now that you're here, it's all a matter of simply filling in your room's details (length, width, and height, as well as door and window info), and you'll get a recommendation for the number of gallons/quarts for walls, ceiling, and trim.

Population Computation

Problem: Several months ago, the U.S. population hit 300 million people, and I became curious about world population data and trends. Where should I look?

Solution: The Population Reference Bureau has an extensive database tool called the DataFinder (www.prb.org/datafind /datafinder7.htm) that has data on "136 population, health, and environment variables for more than 220 countries, 28 world regions and subregions, and the world as a whole." These variables go far beyond simple census numbers and would seem to rival many online encyclopedia sites for depth of population facts. Life expectancy rates, literacy rates, and CO_2 emissions per capita are just some of what you can find out here.

The BBC's Virtual Garden can also be downloaded as a standalone application for Windows, Mac OS classic, or Mac OS X.

Garden Design Tool

Problem: Spring is here, and I'm looking to landscape my backyard. Is there an online alternative to expensive design programs?

Solution: The BBC site features a Virtual Garden online application (www.bbc .co.uk/gardening/design /virtualgarden_index.shtml) that is as robust as a piece of commercial software. It requires that you have Macromedia's Shockwave plug-in installed—if you don't already have Shockwave, it's an easy download. Enter your yard's square footage, and away you go, placing plants, trees, and other landscape features.

Keep The Badware Away

Problem: Everyone tells me to be careful about spyware and adware. Is there a site that lists these malicious software culprits?

Solution: Fortunately, there are a number of Web sites dedicated to stopping intrusive and dangerous software. One such site is StopBadware.org (www.stopbadware.org). Run by folks at Harvard Law and Oxford University, StopBadware.org is a neighborhood watch of sorts that relies on user-submitted data to build monthly reports of suspicious sites. Click Our Reports to see the list of in-depth reports on programs tagged as badware. Or, if you want to see if a particular site could be dangerous, use the search box. Be aware that many of these sites are adult content sites, although this site does not link to them.

A Lot Of Knot Knowledge

Problem: I used to know how to tie a lot of knots when I was in scouts. Is there a good site to refresh my skills?

Solution: From scouting and climbing knots to boating and fishing knots, here is a site that doesn't just tell you how to tie them—it shows you. Animated Knots by Grog (www.animatedknots.com) has step-by-step instructions with images. Whether you used to be a knot pro or know nothing about knots, this site untangles the mess of trying to tie two things together. ▮▮

Figure out the exact amount of paint you'll need using Easy2DIY.com's Interior Paint Calculator.

FIND IT ONLINE

COMPILED BY JOSHUA GULICK
ILLUSTRATED BY LINDSAY ANKER

Eliterate

AbeBooks.com

www.abebooks.com

Whether you're poking around for a good read or hunting for a particular title, AbeBooks.com is a good place to start. AbeBooks.com has access to thousands of bookstore inventories. The site helps visitors find books by matching their search queries with book listings from thousands of book retailers. Simply enter an author's name, book title, keyword, or even an ISBN (International Standard Book Number) to see a list of book copies for sale. Each listing includes a brief description of the quality of the book and its price so shoppers can compare prices without visiting multiple bookstore Web sites. The site also has a Browse section that lists books by category and a newsletter (The Avid Reader) that keeps shoppers up-to-speed on new releases.
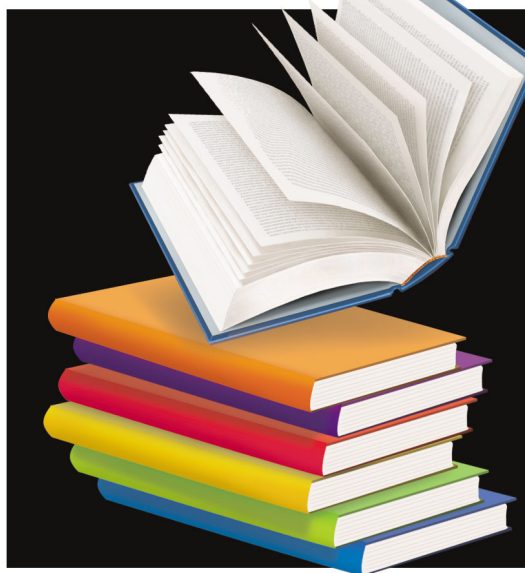
AudioFile

www.audiofilemagazine.com

Planning a road trip? A good audio book makes a great travel companion. If you're looking for some new audio books, check out *AudioFile*'s online reviews. The magazine covers several book categories, including Audio Theater, Humor, Mystery & Suspense, and Western. Many of the reviews are free, but you'll need to subscribe to the magazine if you want access to all of the reviews. The site also features articles about many of the narrators you'll hear.

Bookblog

www.bookblog.net

Book club fans, take note: You don't need to brave wintry nights or bad coffee to share your thoughts about the book of the month. In fact, you won't even need to leave your desk, thanks to Bookblog, an online book club that covers a new book every month. The site features many blog-style discussions and offers lists of the books that the club has read, is reading, and intends to read. If you've been thinking about joining a book club, here's your chance.

eBooks.com

www.ebooks.com

Although many of us prefer printed books to a computer or PDA (personal digital assistant) screen, ebooks are gaining popularity. Many frequent travelers love ebooks, as the digital files are great space savers. You can store multiple books on your PDA and read them without flipping pages. If you're interested in a new way to read, check out eBooks.com, which sells thousands of digital fiction and nonfiction ebooks. The online ebookstore offers most books in a variety of formats to accommodate your device's (or computer's) reading software, such as Adobe Reader, Mobipocket Reader, and Microsoft Reader.

Google Book Search

books.google.com

If you like the idea of a giant, online library, Google's controversial Book Search Beta may be right for you. The search giant's special Book Search feature looks much like its Web search engine, but rather than search Web sites, the Book Search actually scans books' text. You can browse the search results and even view pages of certain books. The Book Search feature is still in beta mode (meaning that it's not yet a permanent fixture of Google), and Google faces some legal challenges for scanning books into its database, so its fate may not be as certain as some of Google's more established features.

LibraryThing

www.librarything.com

If you organize your bookshelves by author, you'll love LibraryThing Beta's online book collection organizing capabilities. Once you register for a free account, you can enter up to 200 of your books (or more for $10 per year or $25 for a lifetime subscription) into an online library that you can access from any PC that has an Internet connection and a Web browser. The process is a snap, as LibraryThing supplements your own information about the book with a host of details, including the author name, the ISBN, and a picture of the book's cover. You can also add tags, which are keywords that help users find books that match their interests, and if you're so inclined, you can share your listings with the LibraryThing community.

The New York Times Books

www.nytimes.com/pages/books

Sometimes the only thing we enjoy more than reading a good book is reading a good review of a book. If you're a fan of book reviews, *The New York Times*' Books section is worth your while. It offers a ton of insightful reviews and stories that cover publishing industry action. Once you register for the free account, you can access full articles without trouble. The main Books page sports recent articles and opinion pieces, as well as a list of best-sellers that leads to the site's reviews.

That's
News
To You

Finding the appropriate Usenet discussion group to match your interests can be a monumental task. So each month, we scour tens of thousands of newsgroups and highlight ones that delve into popular topics. If your ISP (Internet service provider) doesn't carry these groups, ask it to add the groups to its list. This month, we chat with bookworms.

alt.fan.harry-potter

If you have any Harry Potter fans in your family, you already know that they can spend hours discussing the upcoming book or even rehashing existing books from the famous series. This group lets H.P. fans share their thoughts online with other enthusiasts.

rec.arts.books

Do you read any books you can get your hands on, or do you stick to a few select genres? This active group discusses books from a variety of categories; you can find genre-specific conversations in rec.arts.books.histfiction and rec.arts.books.tolkien.

rec.arts.mystery

Discuss your favorite whodunits and check out what other members are reading—they'll be happy to direct you to books by their favorite authors. Members also chat about nonmystery topics here and mark those posts OT (off-topic).

Share The Wares

Some of the best apples in the online orchard are the free (or free to try) programs available for download. Each month we feature highlights from our pickings. This month, we check out blogging tools.

WordPress.com
www.wordpress.com

The days of printed journals and diaries aren't over yet, but that notebook on your bedside table certainly has a competitor. **Blogs** (also known as Web logs) are online journals that let their authors share thoughts with anyone who has an Internet connection and a Web browser. The Internet teems with blogging services that provide blogging software and host blogs. WordPress.com, which is one of these services, offers a particularly easy-to-use (free) blogging tool.

WordPress.com gives you a URL, which is the Internet address your friends and family enter into their Web browsers to visit your blog. Your latest entry appears at the top of the page and previous entries are below it. Visitors can post public comments to your entries. WordPress.com supports photos, which means you can supplement your description of that fateful night at the bowling alley with the pictures you snapped of your fifth strike in a row. You can also upload an avatar, which is a picture that represents you.

Creating your WordPress.com blog is a smooth process. Once you click the Get A WordPress Blog Now link on the main page, you'll need to create a username and a domain for your blog's URL (domain.wordpress.com). Luckily, for those of us who used up all of our creativity when we created the username, you can let your new username double as your domain. For example, if you chose SCMAG for your username, your blog could have the scmag.wordpress.com URL. That said, your username doesn't have to match your domain. You can also title your blog at this stage in the registration process.

Next, you'll need to indicate whether you want your blog to appear in search engines. If you want to share your thoughts with the online world and secretly dream of becoming the next big thing on the 'Net, leave this checkbox selected. On the other hand, if you're planning to share the blog with only a few family members, you won't need this option.

Once you've finished the registration, it's time to get your blog rolling. Visit the Dashboard section of your blog to find the built-in text editor and then create your first blog message. Email your friends and family to let them know your thoughts now have a home on the Web. ▐▌
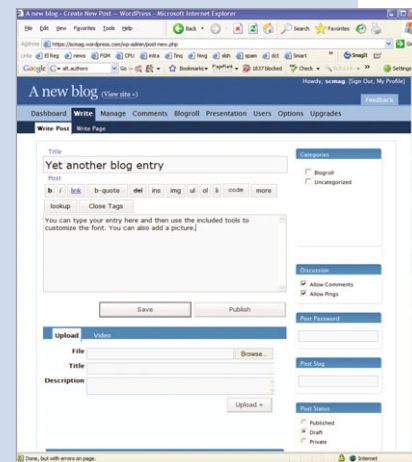
If you're at all familiar with word processing programs (such as Microsoft Word), you won't have any trouble using WordPress.com's built-in text editor to type your blog entries. WordPress.com blogs also support pictures.
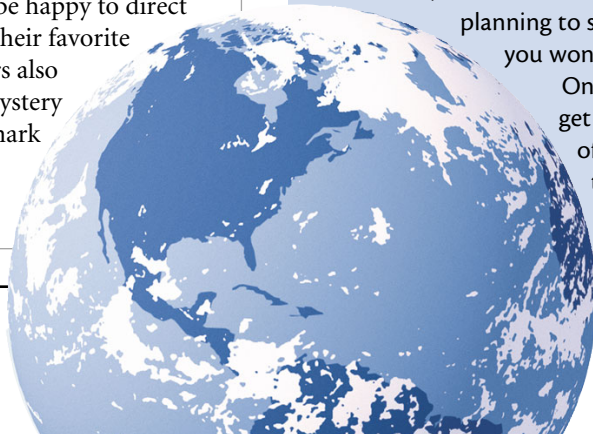
Security & Privacy

Keeping your information secure in our ever-changing world can be difficult. Malware is everywhere. Destructive viruses, worms, spyware, and adware are lurking in the emails we open and the Web sites we browse.

Keep up-to-date on the latest security news and information with SmartComputing.com's Security And Privacy section of the Tech Support Center. You'll find articles on spyware, adware, and nuisances such as spam and pop-ups. Be sure to check out the Web log to find the latest news on viruses, worms, phishing and other important security information.

1 Go to SmartComputing.com and click the Tech Support Center link.

2 Click the Security & Privacy link.

3 Search articles to find all the security information you need! Subscribers, be sure to log in so you can add the articles to your Personal Library!

Tech Support Center

Error Messages
Solutions Knowledgebase
Basic Troubleshooting Articles
Security & Privacy
How To Get Rid Of
Backups & Data Recovery
Preventive & Regular Maintenance
Networking & Communications
Articles On How To Install ... Just About Anything
Driver Education
Other Helpful Tech Support Tools

Remove Specific Threats

Learn how to rid your system of some particularly insidious intruders. From the SmartComputing.com Tech Support Center, click How To Get Rid Of . . . under Security & Privacy for step-by-step instructions on removing specific threats.

Online Threat Centers

It's hard to stay abreast of all the threats online. New viruses, malware, and various other nasties pop up everyday. Many security software manufacturers, such as McAfee (www.mcafee.com) and Symantec (www.symantec.com), have threat centers on their sites to keep consumers aware of the latest dangers.

Lock Your WinXP System

Lock your WinXP system with a couple of mouse clicks. Right-click your Desktop, select New and Shortcut. In the Location field, type **rundll32.exe user32.dll,LockWorkStation**. Name the new shortcut. When you want to lock your computer, just double-click the shortcut. It's that easy.

From *Smart Computing's* Online Dictionary

antivirus program

Software that monitors a computer for viruses by looking for irregularities in a computer system and then comparing its findings to a database of virus information. Viruses not included in the antivirus program's database will go undetected, so it is important to periodically update antivirus programs with information about new viruses. Such updates usually can be purchased on a subscription basis from the company that produced the antivirus program. The regular use of an antivirus program often can eliminate a virus before any damage is caused. Antivirus applications should be used when foreign software is introduced into a computer.

Make Hindrances Into Hints

Firefox is my favorite browser, and thanks to Leslie Franke's Firefox Cheat Sheet (tinyurl.com/nsm26), everything I could possibly need to know about Firefox is available on one printable page suitable for lamination and/or framing, depending on the level of one's personality dysfunction. (Mine is framed.) "The Sheet," as I cleverly call it, includes a plethora of keyboard, navigational, text, search, and mouse-related shortcuts, plus file locations, Firefox tips, links to extensions, and the Firefox Support Forum.

Looking for a challenge? Test your eye-hand coordination at www.mazefrenzy.com. The challenge is to click the red dot and guide it through the maze. If you veer off the path or collide with any moving objects, you'll have to start over. A timer will harass you every step of the way. Rumor has it that the jaunty tune that provides the aural ambiance of this site has been banned at Guantanamo as being too cruel to inflict on suspected terrorists.

If you have a Gmail account, you can create "Out-of-the-Office" auto-responder messages that will only be sent to people in your Gmail address book. Utilizing this feature will prevent inadvertent auto-generated responses to spam, which can only lead to more spam. To create this type of restricted auto-responder, in your Gmail account click Settings, General tab, and under Vacation Responder, make sure that Vacation Responder On is selected. Next, enter your message and place a check mark beside Only Send A Response To People In My Contacts. Then click Save Changes. Gmail will only generate an automated reply to the same sender once every four days, at most.

How rich are you in relation to your six billion fellow homosapiens? At www.globalrichlist.com, enter your annual income, then click Show Me The Money! When I entered mine, I heard giggling, which I thought was a bit harsh.

I'm frequently asked to assist users whose lives and emotional equilibrium are at risk due to the disappearance of their Volume icon. Who among us cannot feel their pain? It's a well-known phenomenon that the volume icon occasionally disappears for no other reason than to keep us humble. To return the meandering icon to its full and upright position in the System Tray, go to the Control Panel and select Sounds And Audio Devices. (The wording will vary depending on your version of Windows.) On the Volume or General tab, place a check beside Place Volume Icon On The Taskbar. If it already has a check beside it, you'll have to resort to what we in the tech-support biz call "the old switcheroo" and remove the check mark, click Apply, replace the check mark, and then click Apply and OK.

And finally, a few months ago, I brought to your attention a more contemporary version of the revered Welcome Wagon, www.familywatchdog.com. This site invites you to meet your neighbors by determining if any convicted sex offenders live in the 'hood. (Ozzie and Harriet, where are you when we need you?)

We have an axiom in the NACC (National Association of Computer Columnists), "Let no good URL go unhyphenated," which later became a bestseller under the name, *When Bad Hyphens Happen To Good Web Sites.* In this instance, the site's address, as fate would have it, appeared in my column at the end of a line. Because the URL was longer than space permitted, it was hyphenated, so part of the address appeared on one line, while part of it appeared on the next line.

In what can only be described as a bit of delicious irony, the inclusion of the hyphen when entering the URL in the Address field of a browser transported the unsuspecting user to what a few readers described as an "offensive" Web site. Ah, the Internet: Can't live with it, can't live without it.

As the eternal optimist, rather than dwell on the negative, I prefer to make hints out of hindrances, so what can we learn from this? Whenever you observe a Web address in print, if a hyphen appears the end of a line, chances are that the hyphen is simply dividing the URL due to space constraints, and is not intended to be part of the actual address itself, so don't include it.

To readers who were offended by the unintentional misdirection, I apologize. And to those of you who discovered a new Web site to bookmark, no thanks are necessary. ❚❚

BY Mr. Modem

Complexity & Change

Equal Conflict

Had Benjamin Franklin lived today, he might have expanded his list of life's certainties to include death, taxes, and computer problems. The fact is that such issues are as common as houseflies and as inevitable as Mondays. Although you can minimize the likelihood of an occurrence, there's not much you can do to stop them altogether.

Conflict Resolution

PCs are susceptible to incidental damage and occasional malfunctions. A miniscule jolt of static electricity, a splash of coffee, even dust can cause serious problems. Regular maintenance and prudent behavior can minimize the effects of age and usage on a computer.

But a PC isn't just another tool; it's quite complex. A properly functioning computer is an intricate system of precision-designed devices, each of which relies on countless microsized transistors, resistors, diodes, and capacitors working together to perform a specific function. And that's just the hardware. Software is equally complex, consisting of billions of electronic bits that spell out in meticulous detail exactly what all of that hardware is supposed to do.

Such complexity exposes computers to something more harmful than the effects of daily wear and tear: conflicts. System conflicts occur when two or more components fail to recognize each other.

Computers are unique. The odds that any two PCs have the same exact configuration are about as good as the odds of Bert and Ernie finding new roommates. Moreover, each unique configuration is designed to perform a wide variety of tasks, such as communication, productivity, and entertainment. That's a remarkable feat, comparable to a car engine that doubles as an air compressor or a refrigerator that washes clothes. This entire situation presents an extraordinary compatibility challenge to hardware manufacturers and software developers.

The manufacturers and developers try to address these challenges by testing and retesting their products prior to release. "Writing the code is usually only a relatively small part of programming," admits Jesse Glick, senior staff engineer for NetBeans at Sun Microsystems. "It's not very hard to write code that does something. It's much harder knowing what to write. And after you've written it, it takes a lot of time to test it and track down all the bugs that can happen in strange circumstances."

During the extensive period of product testing, product engineers look for anything that might reveal the presence of a hardware or software conflict. If the testing is successful, the manufacturers and developers will end up with products that not only perform particular functions but also work with other products that perform altogether different functions.

Another step hardware manufacturers and software developers take to avoid conflicts is listing the minimal technical specifications a computer must meet in order to accommodate their programs or devices. Users should pay strict attention to these system requirements and relevant system recommendations. Failure to do so will likely result in errors and crashes.

Computers change. The second key difference between computers and other devices is the frequency with which change occurs. The typical car engine will run for more than 100,000 miles before it needs even a new spark plug. But every part of a computer requires updating on an annual, monthly, weekly, and sometimes daily basis.

That's OK. Regular updating and upgrading allow a computer to stay abreast of current technology so the user can benefit from optimum performance. They also protect a PC against security vulnerabilities that are identified after a program's release. Each change involves a period of adjustment, during which time the rest of the computer must familiarize itself with the new hardware or software.

If an existing hardware component or piece of software cannot recognize or communicate with an update or upgrade, a conflict occurs and errors arise. The more programs and devices a computer has installed on it, the greater the likelihood a problem will occur.

Opportunities Abound

Complexity has its drawbacks. By its very nature, it creates opportunities for instability. Anything that adds to the complexity of a PC has the potential to create a disturbance that manifests itself in the form of a system conflict. But complexity has benefits, too. All of those microchips and bits of data carry the promise of better performance and greater productivity. In this way, complexity stands as the hallmark characteristic of a device that has become a vital tool. And no one has a conflict with that. ▐▌

BY JEFF DODD
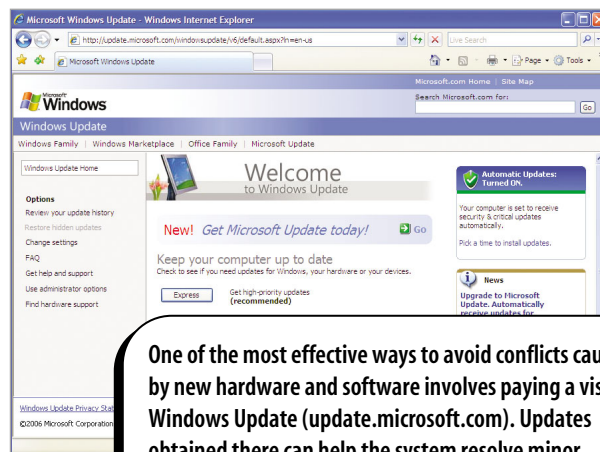
One of the most effective ways to avoid conflicts caused by new hardware and software involves paying a visit to Windows Update (update.microsoft.com). Updates obtained there can help the system resolve minor conflicts before they become major problems.

Driver Issues

To the naked eye, it would appear that hardware devices instantly interact with a PC's operating system without any fancy magic happening behind the scenes. However, there is indeed plenty of interaction between those devices and Windows that ensures that the devices work properly and mesh effectively with applications.

Unfortunately, drivers—the digital middlemen who enable that interaction—are notorious for causing a wide range of problems, from visual artifacts in applications and games to erratic mouse behavior to flaky network connections. The exact cause of these issues isn't always easy to pinpoint, but because so many hardware-related problems can be attributed to drivers, they're usually a logical starting point for troubleshooting.

Stuck In The Middle

When you insert a new device into your PC, Windows doesn't directly access the hardware. Instead, it relies on software called drivers, which contain a specific code that the operating system requires to perform actions on the device.

In most cases, Windows automatically installs drivers for each device that requires drivers. For example, when you plug a memory card reader into a USB port, Windows will detect the reader, install drivers already stored in its driver database, and let you know when the device is ready to use.

One of the first steps for troubleshooting driver issues is checking the Device Manager, which indicates if any devices are missing drivers or experiencing related problems.

However, the drivers that Windows installs on its own aren't necessarily the best drivers, particularly when dealing with multimedia devices. Because application developers regularly create programs that access the latest and greatest features found on today's hardware devices, outdated Windows drivers can encounter problems when those programs attempt to use those features.

If Windows can't find an appropriate device driver, and if you don't install the driver yourself, a device likely won't run at all, or won't operate as it should. Even devices that do have drivers installed can struggle with driver-related problems, requiring a user to reinstall the driver or download and install an updated driver. The good news is that dealing with driver issues isn't a terribly complicated process, thanks to relatively streamlined processes that make it easy to pinpoint and fix driver problems.

Missing Drivers

When you install a device on your computer, you expect it work. However, if Windows is unable to locate a compatible driver for the device, the operating system will be unable to communicate with the hardware to allow proper device operation. In most cases, this means the device won't work until you install a compatible driver for it.

But how do you know whether a device is missing a driver? When Windows first detects a newly installed device, it displays updates about the installation process from the System Tray, and the utility will generally warn you if there's a problem with the installation. If it doesn't warn you, or if your device simply doesn't work or doesn't appear in Windows, you might need to find a driver for it. If the device includes an

installation disc, see if there's a setup program included on the disc—if there is, this program should install the necessary drivers and any other software required to run your device.

If you don't have an installation disc, you'll need to inspect the Device Manager to see if there's a driver problem. In Windows XP, right-click My Computer on your Desktop, click Properties, choose the Hardware tab, and click Device Manager. In this window, you'll see a list of all the types of devices installed on your PC, and by clicking the plus (+) sign beside each device type, you'll find an individual listing of each device.

Examine the icons beside the device types and look for any yellow question marks that overlay the icons. This symbol indicates that there's a problem with the device, such as a missing device driver. Click the plus sign to expand the category and double-click the device that has a yellow warning symbol on it. If your device is missing a driver, a black exclamation point on a yellow circle will appear over the icon.

In the Properties window for that device, look at the box under Device Status. If drivers are missing, you'll see the following message: "The drivers for this device are not installed. To reinstall the drivers for this device, click Reinstall Driver." In a blissfully perfect world, you could click that Reinstall Driver button to solve the problem, but in reality, it often *doesn't* solve the problem. Nonetheless, it still should be the first step in your quest to solve your missing driver problem, so go ahead and click the button to
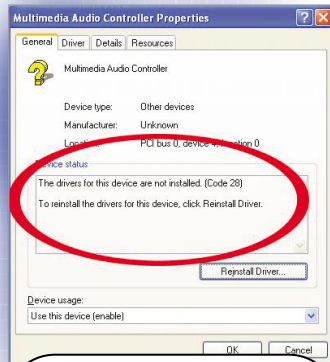
When newly installed hardware devices don't work or don't appear in Windows, the culprit is often a missing driver. Use the device's Properties window to check the driver status.

launch the Hardware Update Wizard.

If you're connected to the Internet, click to select Yes, Now And Every Time I Connect A Device under Can Windows Connect To Windows Update To Search For Software? If the device doesn't have a driver, chances are it's because your Windows driver database doesn't have a driver that's compatible with your hardware, so it's best to connect to Windows Update, which contains all of Microsoft's device drivers. If you're not connected to the Internet, or if you know there's a driver for your device on a CD or other media in your possession, select No, Not This Time. Click Next.

If you're hoping that Windows or Windows Update can find a driver, select Install The Software Automatically (Recommended), but if you have the driver on a disc, select Install From A List Or Specific Location (Advanced). Click Next. If you choose

Web and saved it to your hard drive (we'll cover the downloading process later). When you select Install From A List Or Specific Location (Advanced), you'll see a screen that lets you choose the location of the driver. If you have an installation disc, select Search Removable Media; if you downloaded a driver file or package (*not* an executable file), select Include This Location In The Search, click Browse, and select the folder where you downloaded the driver. Click Next to complete the process.

Outdated Drivers

Missing drivers aren't the only driver issue you'll encounter. In fact, more often, you'll need to tackle problems related to outdated or generic drivers, which won't always prevent your devices from running altogether, but which can prevent them from running properly. Erratic hardware behavior—such as a flickering window in certain programs, strange mouse or keyboard actions, inconsistent sound playback, and others—can often be tied directly to outdated drivers.

Just as with missing drivers, you can try to use the Hardware Update

Erratic hardware behavior can often be tied directly to outdated drivers.

the first option, the wizard will search for a compatible driver. If it finds one, the wizard will automatically install the drive and inform you that it has finished installing the software (that is, the driver).

If you have an installation disc for your device, you can skip the Windows Update search process and instruct the Hardware Update Wizard to search the disc for a driver. You can also use this step if you downloaded a driver from the

Wizard to update your drivers, but there's no guarantee Windows will find a driver that's more recent than the driver you're already using. In the Device Manger, double-click the device in question, choose the Driver tab, and click the Update Driver button. From here, follow the aforementioned procedure for using Windows Update to search for drivers.

However, even if Windows finds a more recent driver, that driver isn't

necessarily the most recent driver. Microsoft uses a driver signing process that requires each driver to be approved by Microsoft for use with Windows. Although this process helps to ensure that drivers you install will work properly with your operating system, it also requires hardware manufacturers to submit their drivers and wait for Microsoft to certify them. Some manufacturers release updated drivers so often that they give their customers the option of downloading and installing unsigned drivers. These drivers usually are not only more recent than the latest signed drivers, but they're

To obtain the most recent drivers for your device, it's often best to skip the Windows Update process and go directly to the device manufacturer's Web site.

often more compatible with the most recent software.

As such, it's always a good idea to search for updated drivers directly on the manufacturer's Web site, generally in the Downloads or Support section.

Many manufacturers package their drivers in a standalone executable file that installs the drivers and any relevant software without any help from the Hardware Update Wizard. Others aren't quite as slick, providing only the driver files themselves, which

you'll need to download to a folder and then instruct the Hardware Update Wizard to use them, as previously detailed.

If Windows tries to block you from installing unsigned drivers, you can easily disable the blocking procedure. Log in to Windows as an administrator and then right-click My Computer, click Properties, choose the Hardware tab, and click Driver Signing. Choose Warn, make sure Make This Action The System Default is selected, click OK, and then click OK on the next window.

Broken Drivers

Occasionally, a once-stable driver can begin to cause problems. In this case, it's best to simply reinstall the driver, which can be accomplished using the Device Manager. Simply locate the problematic device in the Device Manager, right-click the device, click Uninstall, click OK in the Confirm Device Removal box, and click Yes to restart your computer (if asked). Although the device is still connected to your system, Windows "uninstalls" it by removing its driver, and when it restarts, it will reinstall the driver. If you were using downloaded drivers or drivers from a disc, be sure to instruct Windows to use those particular drivers.

Likewise, in the regular process of updating drivers, you might discover

that a new driver is problematic—an occurrence that's far too common due to hardware vendors that fail to thoroughly test their drivers before releasing them. But instead of enduring the messy process of uninstalling the new driver and installing an old one, WinXP includes a handy utility that lets you roll back your device's driver to the previously installed driver.
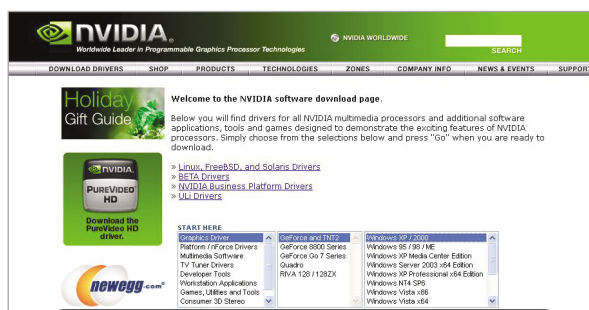
In the Device Manager, double-click the device with the problematic new driver and choose the Driver tab. Click Roll Back Driver, click Yes to confirm, click Close, and click Yes to restart your computer (if asked).

More Tips

When installing drivers, be sure that the drivers are designed for your operating system. For example, your hardware device likely won't work if you install drivers designed for WinXP on a previous Windows version.

Driver issues with USB devices often don't require much legwork to solve, because you can usually just unplug the device from the USB port, wait a few moments, and plug it back in. Windows should then detect the device and install the necessary drivers, or inform you if it couldn't install them.

Finally, if you're unable to solve driver issues using any of these suggested fixes, try booting into Windows Safe Mode by repeatedly pressing F8 immediately after starting your computer. Select the Safe Mode option and press ENTER. Because Safe Mode loads only certain necessary drivers and disables all others, you might have more luck uninstalling or replacing drivers in this environment. After performing any driver-related work in Safe Mode, boot your computer normally to test whether the changes worked. ‖

BY CHRISTIAN PERRY

Hardware Conflicts

Conflicting hardware was the bane of computing existence for years. Juggling IRQs (interrupt request lines) and COM ports was one sure way to ruin a Sunday afternoon. Moreover, you likely had to go through the drill each time you added a new peripheral. Thankfully, the early promise of plug-and-play standards has largely been fulfilled, and modern operating systems are much better than their predecessors at managing hardware. Still, conflicts do arise from time to time, and, when they do, they provide more than opportunities to reminisce about the bad old days. They're a nuisance and a threat to your system's stability. We'll walk through the most common types of hardware conflicts you might experience and provide some assistance in getting through them.

Hardware Conflicts 101

What are hardware conflicts, exactly? Any time multiple hardware devices make claims on the same resources (such as memory, processing power, or assigned ports), and the system is unable to resolve those claims, a hardware conflict results. Conflicts manifest themselves in a variety of ways. Sometimes, a particular piece of hardware simply stops responding or will never work in the first place. Other times, your machine may provide an error that indicates resource or device conflicts. All too often, though, your only indications will be ambiguous signs like system crashes, GPF (General Protection Fault) errors, or screens that simply freeze.

If you suspect a recent driver update of creating conflict, roll back to the previous version from Device Manager.

Obviously, many of these symptoms overlap with other problems, including faulty hardware and corrupted device drivers. And the decreasing incidence of hardware conflicts makes them ever harder to diagnose, though we'll gladly take rare and obscure problems over frequent and obvious ones any time. You may be able to identify peripherals or other components that frequently correspond with symptoms' appearances. Otherwise, you'll have to employ a process of trial and error to verify that you're indeed suffering from a hardware conflict—and sometimes even to figure what hardware is involved.

Conflict Resolution

Whatever conflicts you're experiencing, there are several steps to take in identifying and resolving the issue. First, get very familiar with Windows' Device Manager. Right-click the My Computer icon (either on your Windows Desktop or in the Start menu) and choose Properties. Select the Hardware tab in the resulting System Properties dialog box and click Device Manager. Device Manager provides a listing of all the hardware on your system and provides access to detailed information about each component's resources, drivers, and status. If you suspect a hardware conflict and have recently added or removed components, select Scan For Hardware Changes from the Action menu. If that step doesn't identify and resolve your conflict, expand or collapse each category by clicking the plus and minus symbols on the left. Look specifically for items with bright red or yellow warning symbols next to them, indicating components Windows has identified as malfunctioning.

Access Device Manager's detailed options by selecting and right-clicking any device. You can

Conflicts are especially likely if your motherboard has **onboard video** (a graphics adapter built in) and you add a separate graphics card.

disable or uninstall a device directly from the context menu, which is useful when trying to eliminate problems via trial and error, but you'll usually get more useful information by selecting Properties. Under the General tab, review the Device Status message. Just because Windows says the device is working properly doesn't always mean it is, but the status message provides a good starting point for identifying known issues.

The Driver tab in Device Manager provides summary information about each device's drivers. Because drivers act as the interface between Windows and your hardware, they're a crucial piece of the conflicts puzzle. Maintaining up-to-date drivers will go a long way toward preventing hardware conflicts. You can try searching Microsoft's database by clicking Update Driver, but you're better off visiting the manufacturer's Web site directly and downloading the latest drivers for your hardware version. Install the updated drivers before proceeding. Some hardware conflicts resolve themselves through driver updates. On the other hand, if you suspect that a recent driver update *created* your conflict, select the Roll Back Driver option from Device Manager and try to restore order.

If your conflict involves internal components (expansion cards, hard drives, system memory), be ready to open the case. Have a screwdriver, antistatic wristband, and a pencil and tablet handy. Set aside plenty of time: troubleshooting hardware configurations by trial and error can be a long process involving dozens of reboots and lots of detailed note taking.

Video Card Conflicts

Video cards are one of the most frequent culprits in hardware conflicts.

The video card should be your prime suspect if you experience system problems after adding, removing, or adjusting a graphics adapter or other hardware cards that use PCI (Peripheral Component Interconnect), AGP (Accelerated Graphics Port), or other motherboard slots. Video cards require a great deal of a machine's resources and can be persnickety partners. They can even conflict with seemingly unrelated cards that happen to be in the wrong slot.

Conflicts are especially likely if your motherboard has onboard video (a graphics adapter built in) and you add a separate graphics card. The system doesn't always know which graphics adapter to use, and you can end up with strange video problems or with a system that doesn't function at all.

Begin by checking the placement of your graphics adapter and other expansion cards. If you added a new video card to the AGP slot, check the nearest PCI slot. Sometimes, the AGP and first PCI slots share motherboard resources, so you can

only use one or the other. You probably don't have more than one AGP slot for the video card, so experiment with moving your other cards around. Reboot the machine with each new configuration, seeking the assignments that avoid conflicts.

If you suspect a conflict between onboard video and a new card, you may need to disable the motherboard's graphics adapter in Device Manager. First, make sure you've followed all the instructions and installation steps provided by your new card's manufacturer. Then navigate to Device Manager and expand the Display Adapters category. Right-click any video components unrelated to your new video card (you can tell by the title or, if unsure, by selecting Properties) and select Disable. You may need to try several ambiguous components both enabled and disabled to hit upon the right combination, but the goal is to disable all the built-in video functions and enable all the functions of the new graphics card.

USB Devices

If you have trouble with USB-connected hardware, or start experiencing

Video cards are prone to conflict with other expansion cards, especially if AGP and PCI ports are sharing the same resources.
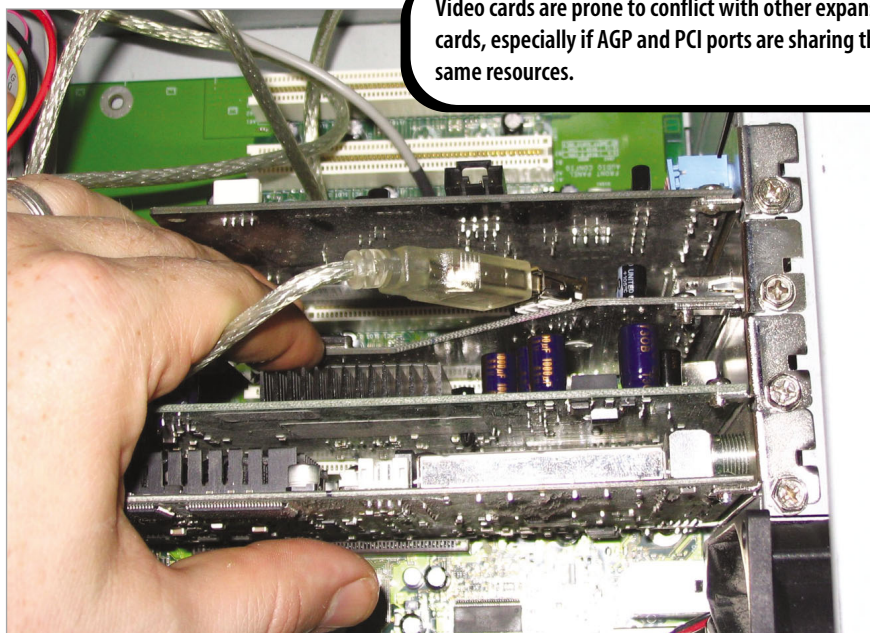
system issues after connecting new devices via USB, you'll need to employ some trial-and-error to identify the problem combination. USB hubs are notorious for creating conflicts amongst their connected devices, so first test each device when directly connected to the machine's USB ports. If each works properly by itself , attempt to connect them all via the hub again. If the problem reappears, try various configurations of devices connected directly to the ports and via the hub until you find a combination that works. If no combination using the hub avoids conflicts, but all devices work independently, you'll need to get a new USB hub. Independently powered hubs tend to have less conflict than those taking their power from the machine via USB connection.

On rare occasions, the devices themselves may conflict even without a hub. In that case, you'll need to go through a similar process of trial and error to identify the devices that don't get along. Most new machines have several banks of USB ports (in front, on the motherboard, on the side of the case), so try connecting problem devices in separate sections. Ultimately, you may find some devices that simply won't work with others.

Memory Modules

System memory can also be a source of conflict. New RAM may conflict with old memory, with other system components, or be faulty from the beginning. And nothing wreaks havoc like faulty memory. You may be lucky enough to receive an error explicitly identifying memory conflicts. If you're just experiencing general system instability unrelated to specific hardware devices, messing

with RAM should be one of your last options unless you've recently changed, added, removed, or otherwise adjusted your system's memory. In either case, rearrange and remove your memory modules, one by one, until the problem goes away. It never hurts to upgrade memory, so consider purchasing new memory from a reliable source, up to the maximum your motherboard accepts in its recommended configuration as per its documentation.

IRQ Issues

Finally, though they're rare these days, old IRQ and DMA (direct memory access) demons can still rear their ugly heads. If you're dealing with parallel- or serial-connected hardware or with standalone devices competing with onboard versions (network cards, modems, or FireWire ports), you may end up manually refereeing resource assignments. To do so, open Windows' Device Manager and right-click the ports or devices in question. Choose the Resources tab and see if the Use Automatic Settings checkbox is available. In most cases with Windows XP, the option is selected but grayed out—you don't have any choice but to accept automatic settings. For manually configurable resources, however, you can opt to deselect the automatic settings box and assign resources yourself. Deselect the box and select each of the available configurations from the Setting Based On: list. Watch the Conflicting Device List box for known conflicts, and find a configuration without any. If you want to configure specific resource types manually, including

Default IRQ Settings

In a pinch, you might need to manually adjust those IRQ settings again.

IRQ 0	System Timer
IRQ 1	Keyboard
IRQ 2	
IRQ 3	Communications Port (COM2)
IRQ 4	Communications Port (COM1)
IRQ 5	
IRQ 6	Floppy Disk Controller
IRQ 7	
IRQ 8	System CMOS/Clock
IRQ 9	ACPI-Compliant System for Sharing Amongst PCI resources
IRQ 10	
IRQ 11	
IRQ 12	PS/2 Mouse
IRQ 13	Numeric Data Processor
IRQ 14	
IRQ 15	

the IRQ number assigned to a device, select the IRQ entry in the Resource Settings list and click the Change Setting button. Scroll through the available values, again watching the Conflict Information panel to find an assignment without conflicting devices. Click OK through the dialog boxes to accept your changes and reboot if necessary.

Hardware conflicts can be frustrating, messy, and tedious. But they're also thankfully rare. With a little patience and the process of elimination, you can almost always find a way to get your hardware to play nice again. ‖

BY GREGORY ANDERSON

If dueling memory sticks create chaos, try rearranging the modules according to manufacturer's instructions.

Software Incompatibilities

There are two facts about software. First, it can be fabulous, letting you do anything from touch up photos to access bank records online. And second, it can be a horror, buggy and cranky and causing all kinds of system conflicts. The trick is knowing how to resolve these conflicts quickly.

Software-based system conflicts occur when a piece of software, whether it's a third-party tool such as Adobe Photoshop or a built-in program such as Calculator or Notepad, fights with your operating system. Sometimes they fight over access to a system resource, such as RAM. Sometimes they send conflicting instructions to your system's hardware, causing it to crash. And sometimes they simply grind things to a halt, causing your system to hang or become sluggish.

How do you know that software's the problem? You can read tea leaves or gaze into your crystal ball, or you can follow some basic clues:

The system acts up when a certain piece of software loads. If your system starts to hiccup when you boot QuickTime or Solitaire, there's a good chance that software is the cause.

Problems start when you install new software. If your system was humming along until you installed Adobe Photoshop or Broderbund PrintMaster, it's likely the software is causing the problem.

There are no hardware conflicts. If you can't find a clear hardware conflict in the System Manager (which we'll discuss below), then software may be the culprit.

The problem happens when you use a certain feature, such as the search function in Outlook. That's a dead giveaway that software, not hardware, is the problem.

Removing TSRs and background programs solves the problem. TSR stands for Terminate and Stay Resident, a type of program that remains in your computer's RAM even when you exit it so that it can load quickly the next time you need it. We'll show you how to remove them below, along with programs that run in the background.
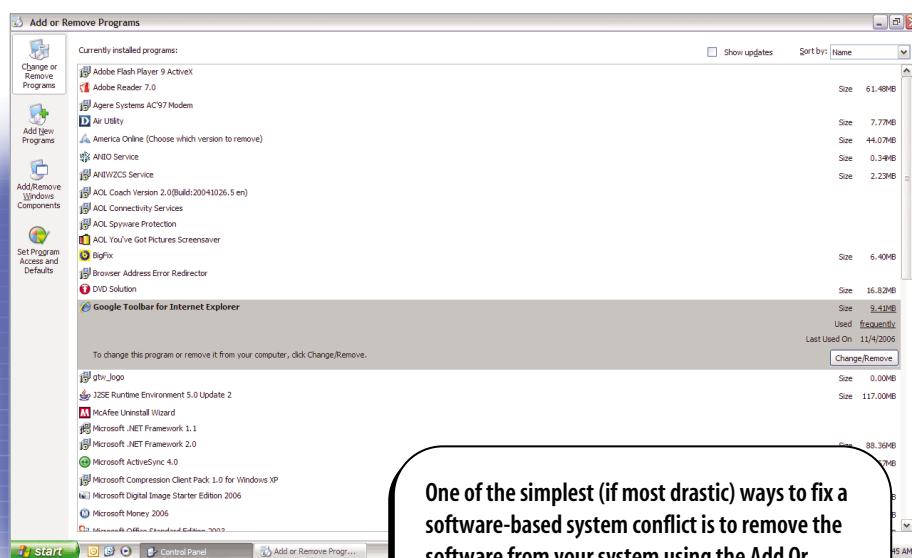
One of the simplest (if most drastic) ways to fix a software-based system conflict is to remove the software from your system using the Add Or Remove Programs window in the Control Panel.

You get a software error message. Some types of error messages, such as ones that mention a piece of software by name or even a particular document, are clear signals of software conflicts.

The problem is fixed by deleting temp files, rebooting, or removing the software in question. All three point to software, not hardware, as the villain.

The problem is fixed by a virus scan. Viruses rarely attack hardware. If a virus scan finds and removes malware on your system and your system works better as a result, the problem was likely caused by hijacked software.

So, assuming you have one of the problems listed above, how do you fix it? We'll walk you through the most common steps below.

Problems Caused By New Software Or Software Features

If your system gets cranky after you install a new piece of software—or if your system crashes, hangs, or simply slows down when you press a particular button, open a particular menu, or use a certain feature—the problem can be easy to fix.

The fastest solution is simply to uninstall and reinstall the software. True, some problems of this type can be fixed by less drastic measures, such as tweaking the software's settings or even the Windows Registry. (The **Registry** is a master database of Windows settings; however, because even the smallest change to the Registry can give your system the jitters, it's best to alter it only if you're utterly certain of what you're doing.) But often it takes an expert's touch to know exactly what to tweak or which setting to change.

To uninstall software in WinXP, click Start, Control Panel, and Add Or Remove Programs and wait for the

Add Or Remove Programs window to load. When it does, choose the software you'd like to remove from the list and click Change/Remove. Follow the prompts to remove your software from the system and then reboot. Rebooting is crucial; it gets rid of files and settings that were still in use when the uninstalled program was running.

Once you've rebooted, reinstall your software. If that fails to fix the problem, you'll need to call the software maker's support line or search its Web site for a potential fix. Sometimes there are downloads, patches, or tweaks that a support expert can walk you through.

Deleting temp files can improve system performance. The system pictured above has only one temp file; some computers have thousands. The more temp files, the more likely that one of them—or dozens—are causing a system conflict.

Getting Rid Of The Extras

When software runs, it leaves temp files scattered throughout your system. These are temporary documents used to store data or bits of code the software needs; all too often, those temp files stay in your system when the software exits, causing system conflicts, lags, hangs, and crashes.

Getting rid of them is easy. In WinXP, click Start, Search, and All Files And Folders. In the All Or Part Of The File Name box, type ***.tmp**. Choose My Computer from the Look
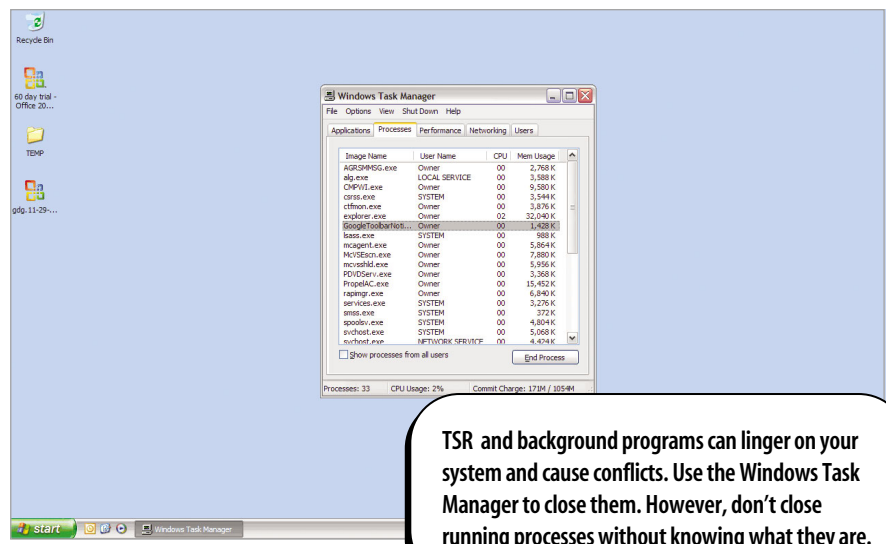
TSR and background programs can linger on your system and cause conflicts. Use the Windows Task Manager to close them. However, don't close running processes without knowing what they are.

In menu. Click More Advanced Options and select the Search System Folders box, the Search Hidden Files And Folders box, and the Search Subfolders box. Then click the Search button.

When the search is complete, click Edit and Select All or press CTRL-A. Then press DELETE. If certain temp files won't delete, reboot your system and repeat the procedure. If this fails to fix your problem, search for other, less common types of temp files by typing *~.*, *.~*, *.—-, or *.old in the All Or Part Of The File Name box. But be careful: Typing just one wrong character will retrieve documents you don't want to delete, with potentially disastrous effects.

It's also smart to stop all TSR and background programs to see if that resolves your system conflict. To do so, press CTRL-ALT-DELETE to open the Windows Task Manager and then click the Processes tab. You'll see a list of the all the programs that are running on your system. The Image Name column tells you the name of the program that's running (names are often cryptic, such as VTTrayp.exe or Crss.exe). The User Name column tells you who started the program— you, the system, or a network service. Select the program you think may be causing the problem and then click End Process. Just be sure to choose programs whose User Name is yours, not SYSTEM or NETWORK SERVICE. And don't ever terminate the program named Explorer, as it gives you access to the Start menu and other crucial Windows functions.

When In Doubt, Reboot

You'd be amazed at the number of software-based system conflicts that can be fixed with a simple reboot. In WinXP, just click Start, Turn Off Computer, and Restart. If rebooting makes your system conflict disappear, it's nearly certain that software was the cause, as hardware problems tend to persist no matter how many times you reboot the system.

A good virus and spyware scan can also clear up system conflicts that stem from malicious code you don't want. Along with rebooting and temp

> If rebooting makes your system conflict disappear, it's nearly certain that software was the cause, as hardware problems tend to persist no matter how many times you reboot the system.

files, many experts say that running your antivirus and anti-spyware tools is the first line of defense against common software issues.

Finally, don't forget to look right under your nose. If you're not sure if hardware or software is causing your system conflict, review the state of your hardware by clicking Start, My Computer, and View System Information (in WinXP). Then click the Hardware tab and the Device Manager button to view all the hardware that's installed in your system. If you see a red X or a yellow question mark next to a piece of hardware, it's not working, and it could be causing your system conflict.

Once you run through the aforementioned options, there's a good chance you'll fix most of your software-based system problems. If not, there's a help desk call in your future. Just remember to tell the support agent what you've done thus far, whether it's clearing temp files, running your antivirus program, removing software, or zapping all TSRs from memory. When you're fixing a malfunctioning system, every bit of information is a clue and a step closer to making things right. ▌▌

BY DAVID GARRETT

Believe it or not, simply rebooting your machine can end a vast number of software-based system conflicts, because rebooting exits TSR (Terminate and Stay Resident) and background programs, removes some temp files, and returns the system to a clean slate.
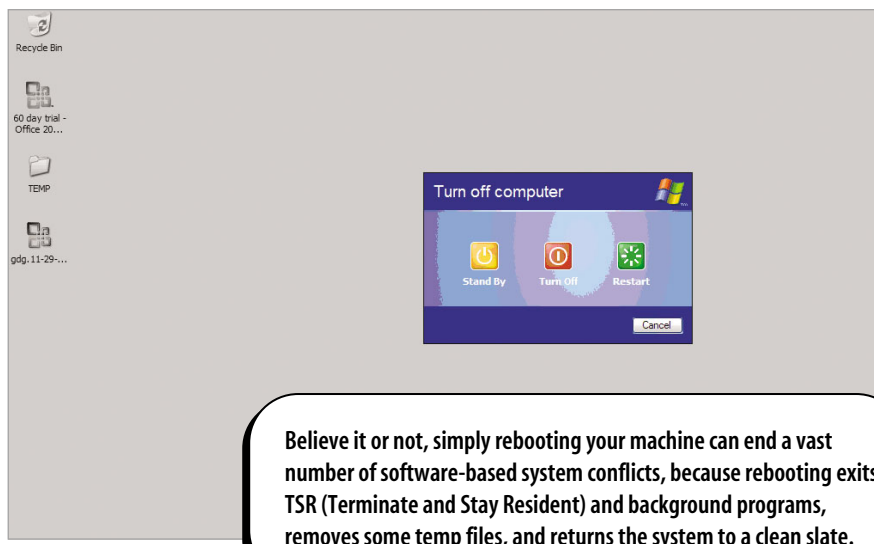
OS Upgrades & Patches

T he process of patching or upgrading your operating system has come a long way from the days when much of this work involved looking around for all the necessary software components and opening and saving the right files in the right locations. Nowadays, users can easily download and install most upgrades and patches from one link. But what happens when things don't go as planned and your functioning OS stops working?

Patches vs. Upgrades

A patch can be many things: an upgrade to your existing software that adds additional features, a fix for a bug, or a new driver to address security issues. You can download most patches free; they're provided by the software developer as an enhancement to the software a user has already purchased, and you can usually install these free patches right over the top of the existing software. If a patch includes substantial improvements or changes, however, the developer may require users to buy the new version at a discounted upgrade price. In these cases, you may have to remove the old software from your computer before installing the new version.

Time For An Update

Check for updates to make sure you have the latest versions. This protects your computer from viruses and security problems and gives you access to the newest features. Microsoft makes this process easy with its Automatic Updates. It allows you to set up how often and at what time of day or night you want your computer to connect to the Internet and automatically search for available updates your computer needs. You can have your computer download and install the updates or you can go through the available list and choose which ones to install yourself.

If you're ready to upgrade your OS, a good place to start is the Upgrade Advisor. Users who have not yet upgraded to WinXP may want to read about and download the Upgrade Advisor, available at www.microsoft.com/windowsxp /home/upgrading/advisor.mspx. This tool will scan your system and determine if you have the necessary software and hardware to support an upgrade and will identify any possible compatibility issues. Users interested in a Windows Vista upgrade can get a similar Vista Upgrade Advisor here: www.microsoft.com/windowsvista/get ready/upgradeadvisor/default.mspx.

Troubleshooting

Once you have found the patches or upgrades you need, the process of downloading and installing the software is pretty straightforward. But you'll sometimes encounter problems.

Update site error message. Perhaps you have run into trouble even before installing an upgrade or patch. A computer can have problems using the Windows Update or Microsoft Update site. You will know this is what's happening to you if you receive one of the following error messages:

Error 0x80072EE2
Error 0x80072EE7
Error 0x80072EFD
Error 0x80072F76
Error 0x80072F78

To resolve this problem, you can use an automated method or manual method. Microsoft's Guided Help can help fix problems with the Update site for you. Note that the actions Guided

It can be very frustrating to successfully upgrade your OS or install a software patch and then discover that a program that formerly worked fine is now on the fritz.

Help performs cannot be undone. You must meet the following requirements to use Guided Help:
- You must be logged on to Windows as the computer administrator
- Youp PC must be running Windows XP Home, XP Professional, XP Media Center Edition, or XP Tablet Edition
- You can download Guided Help at support.microsoft.com/?scid=aw;en-us;836941&eula=1.

To resolve the problem, complete the steps below. After each step, check to see if the problem is resolved.

Step 1
Make sure your Internet connection is working. If you can access other Web sites, you know your connection is working and you can move on to the next step.

Step 2
For the Update site to work, it needs access to the Internet, so you may have to adjust your firewall settings. It is important to turn on the Windows XP Internet Connection Firewall before you disable your firewall for troubleshooting. Do this by clicking Start and Control Panel. Double-click Network Connections. Right-click the connection for which you want to turn on the Internet Connection Firewall and then click Properties. In the Advanced tab, click the box to select the option to protect my computer or network.

Step 3
Disable any software accelerator programs you may have installed.

Step 4
Make sure your computer isn't blocking the Update sites by adding it to the Trusted Sites List. Open Microsoft Internet Explorer, and, from the Tools menu, click Internet Options. Click the Security tab and then click Trusted Sites. Click the Sites button and then

click to clear the Require Server Verification (Https:) For All Sites In This Zone checkbox. In the Add This Web Site To The Zone text box, enter the following addresses, clicking Add after you type each address: update.microsoft.com, download.windowsupdate.microsoft.com, update.microsoft.com/microsoftupdate/v6/default.aspx. Then click OK twice.

Program installation problems. Sometimes, you have no trouble downloading a patch or upgrade, but you can't get the software installed on your computer. If you're experiencing this problem, you'll see an error message that contains different information, depending on the type of error. These possible messages include "Digital signature not found," "Failed to install catalog files," and "The software you are installing has not passed Windows

One way to make sure you can properly access and use the Windows Update site is to add its URL to the list of sites your computer trusts in the Trusted Sites dialog box.

Logo testing to verify its compatibility with this version of Windows."

Because this is such a broad category, there are many error messages you could be receiving, each with a different cause and resolution. Consult support.microsoft.com/kb/822798.

Device driver dilemmas. A **device driver** is a software that is designed to allow your PC to work properly with a piece of hardware. Every once in awhile, these drivers need to be updated; Microsoft Windows Update

can alert you when you need a driver update and help find it for you.

If you have installed an update for a driver and are experiencing trouble with your computer or the piece of hardware related to the newly installed driver, the driver files may not have been installed correctly.

To fix this problem, you need to restore the driver. Right-click My Computer on your Desktop. Choose Manage and click Device Manager. A list of hardware devices will appear in the right pane. Right-click the device that is not working and click Properties from the drop-down menu. Click the Driver tab and click the Roll Back Driver button. Now you can try installing the new driver again.

Programs vs. OSes

It can be frustrating to upgrade your OS or install a software patch and discover that a program that formerly worked fine is now on the fritz. If this has happened to you, don't worry. There are a few things you can do. Start by reading the fine print that accompanied your upgrade or patch. Certain upgrades or patches don't work with older versions of software or particular programs. If this is the case, the source of your upgrade should inform you of the problem and offer some solutions.

Another step you can take is to uninstall and reinstall the offending program. You can do this through the Add Or Remove Programs icon in the Control Panel.

Empower Yourself

Keeping all the software and hardware in our systems up-to-date can be a large and daunting task, but it doesn't have to be. Armed with this information and the resources you can find online, you won't fall victim to your next computer calamity. ▌▌

BY JENNIE SCHLUETER

Security Application Issues

Security-related software—antivirus, anti-spyware, and firewall programs—is your best line of defense against the malicious intrusions than can corrupt or damage your system. However, these crusaders can also be the source of system troubles. We'll describe some of the more frustrating issues associated with security software and help you identify and resolve them.

Tracking Trouble

Security programs can cause a wide range of system woes. Some overzealous programs block access to needed data pipelines (ports) or shut down potentially dangerous services on your PC, while others scan so many files, so often, that they can bring important operations to a crawl or thwart them altogether. Additionally, other programs sometimes interact ineffectively with security programs, and nonaligned security solutions can even cause trouble for each other. Any of these issues can make system operation a nightmare.

Sometimes you'll receive error messages that lead you to suspect a particular security-related trouble source. However, if you are experiencing unusual problems with no (or inscrutable) errors, pinpointing the problem requires more work. Security programs are most commonly implicated in situations involving a connection of some type. For example, if you cannot print, connect to your home network or the Internet, or retrieve email, a security program may be the reason.

However, security software can also cause software and system crashes or freezes, as software attempts to access blocked connections or services without your knowledge. Prime examples are programs that access Internet-based help files, tutorials, templates, and updates or reach across a local network to acquire files or information.

The easiest way to troubleshoot security-related issues is to disable the programs. However, on the off chance that an undetected virus or malicious program is the real source of the problem, it's a good idea to run a security scan before you proceed. (This is especially true if you are experiencing problems with a security-related application.) We don't recommend using your existing software—if it missed something once, it may miss it twice.

Instead, use a free, online security scanner (or download a free trial at a friend's PC if you cannot go online) from a company other than your current one. Trend Micro (housecall.trend micro.com), Panda Software (www.pandasoft ware.com/products/ActiveScan.htm), StopSign (www.Stop-Sign.com), and numerous other companies offer free online scans. If your system has been compromised, perform the recommended actions immediately.

Dig A Little Deeper

If the virus scans come up clean, disable your security applications, one by one, and see if the problem persists. Start with software most recently installed, unless the problem is with that program. If this is the case, disable everything other than the program causing trouble.

To disable a security program, locate the icon for the application in your System Tray, right-click it, and look for a Disable, Exit, Shut Down, or similar command. If not available, open the program's control console (from the System Tray or the All Programs menu on the Start menu) and locate the exit command there.

The easiest

way to

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security-

related

issues is to

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programs.

As part of your tests, disable the Windows Firewall, as well. In Windows XP SP2, select Control Panel from the Start menu, double-click the Security Center icon, click Windows Firewall, click Off (Not Recommended), and click OK. If you already have other firewall software running, the setting should already be (and should remain) set to Off. (If you're running two firewalls or two antivirus apps, that may be the source of your problem right there. Never run more than one such program.)

At each step with a different form of protection halted, perform the problematic task again. (If the task is retrieving email, do NOT open any emails or attachments until you re-enable protection.) If disabling security programs individually doesn't work, try disabling all your protections at once and performing the task. When you can perform the task, you have located the source of the problem.

If disabling any or all of your security applications does not help, it doesn't mean they're not the problem, but it becomes more unlikely. If you are seeing security related errors or the problem is connection related, read on. If not, and you have not recently installed new security software, explore the other articles in this section before you proceed.

If disabling one or all of your security programs resolves the problem, the solutions that follow should help you get back in action. We've identified them by general type for ease of reference.

Messages About Or Problems With Windows Firewall

Messages that say Windows cannot display the Windows Firewall Settings or problems opening Windows Firewall occur when some other program or service (usually another firewall) has disabled the utility. If you don't think you have a firewall, it's possible your security suite includes

one of which you are not aware. Find out and don't try to open Windows Firewall if you are protected elsewhere.

If you do not have firewall protection and are getting a similar message, you should be able to restart Windows Firewall. From the Start menu, select Run, type **Services.msc** in the Open box, and click OK. From the list of services, locate and right-click Windows Firewall/Internet Connection Sharing (ICS). Select Properties, and under Startup Type click the drop-down menu and select Automatic. Under Service Status, click the Start button.

If this doesn't work, select Run from the Start menu and type **Rundll32 Setupapi,InstallHinfSection Ndi-Steelhead 132 %windir%\inf\netrass.inf** in the Open box and click OK. Restart WinXP, return to the Run command and type **NETSH FIRE WALL RESET**, click OK, and follow the prompts. This should restart Windows Firewall. If not, reinstall Windows Service Pack 2 from down load.microsoft.com.

Messages About A Security Application Not Running, A Red Circle With An X Over A Security Icon Or The Windows Security Center Icon In The System Tray, Or A Security Application That Won't Run

If a red circle appears over the Windows Security Alerts icon (mouse over it to find out), double-click it to see what problem the system is reporting. If the red circle is over a security application's icon, or once you know which program is not working, open it (find the program on your All Programs menu) and attempt to enable protection. If you cannot, you may have a system infection, as

worms and other malicious invaders often disable security protection. If you didn't scan your system using a third-party security scanner in the previous section, do so now.

If you did, and your system is clean, restart your PC and see if protection starts (the icon appears in your System Tray). If it doesn't, open the program again and check for program updates. If that fails, and you have a security suite and a separate third-party firewall, it's likely that one firewall is disabling the other. Make sure only one firewall is running by checking the settings in all security programs.

If none of these solutions works, try reinstalling all the security programs. Check with the manufacturers for the preferred order of installation. Uninstall any early versions of security programs (especially antivirus software) before you reinstall the newer versions. If you are running multiple solutions from different vendors, you may have to choose among them, as some simply are not compatible.

Cannot Print, Share Files, Access Your Network Or Browse The Internet

Generally, these problems occur when a firewall is making decisions in the background that are too stringent for your needs. If disabling your firewall resolves the problem, turn it back on and right-click the icon in the System Tray to look for a Halt Traffic or similar option. Check to make sure this is not turned on when the problem recurs. If it is not, instruct your firewall to notify you before it blocks access. Using the instructions

offered earlier, open the control console and look for a settings or preferences option. There should be a way to request notification.

You may also need to manually enable or add programs, services, or Web sites to an Exceptions or Allow list to prevent your firewall from blocking them. Some firewall programs present you with a list of commonly blocked elements; others make you locate them.

Blocked Windows File And Printer Sharing in Windows Firewall is a particularly common source of trouble, so we will use it as an example. To resolve this issue, you would open Windows Firewall as instructed in the previous section, click the Exceptions tab, and make sure the checkbox in front of File And Printer Sharing is selected.

Port blocking can also cause trouble, and nearly all firewall programs let you add ports, sometimes using an Advanced feature. If you don't know which ones are affecting a program or service, turn on the firewall's logging feature. Repeat the problematic task and then review the log to see which port the program is blocking. The safest course will be to unblock that port only when you need to use the program.

Finally, if you are experiencing problems across a home network, disable firewall blocking for the network and its components. If you cannot find such an option, uninstall the firewall, make sure your network is up and running properly, and reinstall the firewall. Most firewalls will setup access to your network automatically if they detect one during installation.

Programs (Especially Internet-Connected Applications) Run Excessively Slow, Crash, Or Freeze, Or The System Stops Responding Or Slows Down When You Run The Problematic Program

This is very common behavior with security programs. If the problem resolves when you disable a firewall,

first make sure the problematic program is on your firewall's exception or allow list. If that doesn't resolve the issue, the program may require other blocked services. Check the block/allow lists in your firewall for related elements.
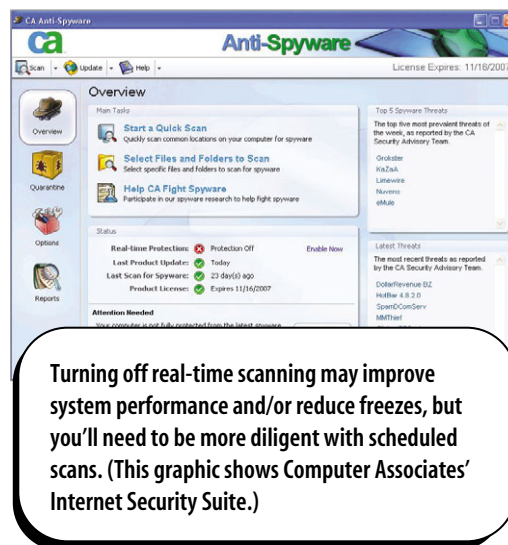
If the problem resolves when you disable antivirus or antispyware programs, tweak the settings in the control console. Turn off automated services you don't need, such as ongoing spyware scanning or virus scanning of outgoing emails. You can also exempt files and folders you know are safe from scanning, or disable the scanning or blocking of file types with a low likelihood of causing problems. File types you should always scan (all of

Turning off real-time scanning may improve system performance and/or reduce freezes, but you'll need to be more diligent with scheduled scans. (This graphic shows Computer Associates' Internet Security Suite.)

which are executable in some form) are those with the extensions .EXE, .SCR, .COM, .DLL, .INF, .PIF, .VBS, .DOC, .DAT, .BAT, .REG, .HTM (or .HTML), .CHM, and .HLP.

Note that some security programs are notorious resource hogs and will be a continual source of trouble, particularly on older systems. You may need to replace them.

A Helping Hand

Before you run off to resolve security-program related troubles, consider some friendly advice. First, handle

changes respectfully, as they can make you more vulnerable to attack.

If you tweak the settings in your firewall, specify access restrictions. For example, for File And Printer Sharing, restrict access to the PC or local network level (also consider establishing file-access restrictions on your PC; see WinXP Help on File And Printer Sharing for assistance). For programs that require Internet access, restrict to outgoing requests only if that is an option. (If you are worried about this, you may be able to create a special profile to enable only when you need to use the problematic task.)

For antivirus and antispyware programs, if you disable any automated features, become more diligent with on-demand inspections. For example, manually scan incoming attachments you choose to save or open and increase the frequency of full-system virus and spyware scans. Second, if you cannot locate the features and options we discuss here, look to your users manual or the Help feature in these programs, using the functions we discuss as keywords.

Finally, if you know a security program is causing problems—with your system, software, or another security utility—but you cannot resolve it, there is a useful but lengthy way to further pinpoint the trouble. Shut down all programs (including security), restart only the problematic program, and perform the troublesome task. Press CTRL-ALT-DELETE, click the Processes tab, and note all currently running processes. Now, restart the problematic security program and attempt the task again. Check the processes again: The ones that are missing are likely being blocked by your security software. Add those processes to an exceptions (firewall) or ignore (antivirus or antispyware) list. If you cannot, contact the manufacturer of the security program causing trouble and ask for help. ▌▌

BY JENNIFER FARWELL

Backups & Data Recovery

We all know how important it is to keep up on antivirus and antispyware scans to keep them running smoothly. But it's just as important to back up your computer, as well. Think about all of the important information sitting on your computer: The pictures of your granddaughter's dance recital. Your tax records and other financial information. All of the music you spent hours (legally) downloading. Now, imagine all of that information disappearing. Scary, huh? Backing up your system can prevent problems and can save a lot of time and stress.

Find all the information you need in SmartComputing.com's Tech Support Center. The Backups & Data Recovery section is full of articles on how to back up your system and recover valuable information. The articles cover basic computing language, the tools you'll need to back up your system, and how to avoid losing data. Check out these great articles in the Tech Support Center at SmartComputing.com today!

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Articles On How To Install … Just About Anything
Driver Education
Other Helpful Tech Support Tools

1 Go to SmartComputing.com and click into the Tech Support Center.

2 Click the Backups & Data Recovery link.

3 Search articles to find all the backup information you need! Subscribers, be sure to log in so you can add the articles to your Personal Library!

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Backup Basics

Lost data has serious implications for any PC user, but using backups protects your precious data. A **backup** is simply a copy. It may be a copy of individual files that you're working on at the moment, a comprehensive copy of your hard drive, or anything in between. Just what you back up, and how often, depends upon your particular needs. When trouble strikes, you can recover lost files from the backup and continue working with a minimum of fuss. Without a backup, work, weeks or months in the making, disappears. Backups protect your files from your own errors, power surges, computer viruses, hardware failure, and more. Here, we'll show you how to master disaster with planned backups of your system.

PriceGrabber

In the market for an external hard drive? The PriceGrabber function on the SmartComputing.com home page can help you find some remarkable deals. Many of the listings even break the price of the drive down by gigabyte.

Your Privacy

You can rest assured that your sensitive information is safe with us. Click the Privacy Policy link at the bottom of any page for a look at our guidelines for keeping data secure.

Backups

A backup can only help you out of a jam if you can find it. Be sure to properly label your discs and store them in safe location. You may consider storing especially important files offsite, such as in a safety deposit box.

There are three main types of backups: full, differential, and incremental. A full backup makes a fresh copy of your system, regardless of what's changed since your last backup. A differential backup only backs up files that have been modified since the last full backup. Incremental backup backs up only the files you have modified since any backup; this requires the least amount of storage space.
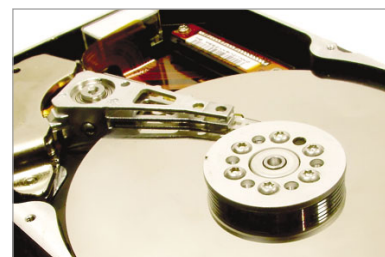
Broderbund Print Shop Deluxe 20

Tables Let You Organize Text

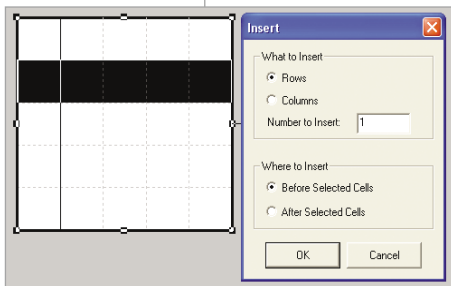**B**roderbund intends for Print Shop Deluxe 20 to cover a lot of bases for its users. So it's no surprise that the program would offer the capability of creating tables.

Tables in Print Shop are meant for holding text. You can change the looks of a table or cells, but you can't insert other objects.

Create a table by clicking Table and Insert Table on the menu bar. This brings up the Create Table dialog box. The selections here are pretty simple. You choose the number of Rows and Columns and the Table Format from the boxes on the left. A sample appears on the right. You can change rows, columns, and the format even after you have placed the table in your project.

Click OK when you have made your choices. The table appears on the Design Desk with eight handles for resizing and an additional handle for rotating the table. You can also resize columns and rows by placing the pointer over a table line and clicking and dragging.

Change Font Size

The default text size in a table cell is 3 points, which is very small. Click the upper-left cell and drag to the lower-right cell. This selects all the cells.

Click the Font Size drop-down menu and choose a more reasonable size.

Double-click any of the cells, and a text insert bar will appear. Enter the text and modify it as you would any other text. Press TAB to move a cell to the right.

Click Table and Auto Format, and the Auto Format dialog box will appear. You can change the table's style by selecting one of the other formats and clicking OK. Text already placed will remain, but you may need to reformat it.

Now place the pointer to the side of one of the rows until it turns into an arrow. Click; the row will darken. Click Table and Insert to bring up the Insert dialog box. Click Rows. The only selections to make are how many rows you want to add and where you want them placed. The same process applies to inserting a column, except that you select one of the columns in the table instead of a row.

Removing rows and columns is simple. Select a row or column to delete and click Table, Delete Row, or Delete Column. You can't insert or delete individual cells, only rows and columns.

Modify Cells

Now let's look at working with individual cells. Selecting an individual cell is a bit tricky. Click a cell and drag to an adjacent cell. Then, while still holding down the mouse button, move the cursor back to the original cell. Only that cell should be selected now.

Click Table and Cell Formatting to bring up the Cell Formatting dialog box. Here you can fill the cell with a different color and adjust the thickness and color of the lines that define the cell. The box on the left gives you a preview.

You can change only one side of the cell wall at a time. Click the line you want to change, and two arrows will appear on either side. Designate a Line Width in points. Even if you leave the Line Width at 0, the cell walls will still appear on-screen and print. A dotted line, however, will not appear if printed. These occur in certain table formats. The lines will appear wider when you set the Line Width at 1 or above. Click the Fill Color and Line Color bars to bring up the Windows color palette.

You can also select several cells at a time and make changes to them as a group. This allows you to make changes to several cell lines and fills. The preview on the left will reflect the fact that several cells are affected.

Repeat Info

Print Shop provides a way for you to repeat text across a number of cells without needing to retype the information. Enter some text in the upper-left cell. Click the cell that contains the text and drag to select cells to the right. Click Table and Fill Right, and the text will be repeated in the selected cells. You can use the same process to fill cells below the cell containing the text.

You can also merge cells if you need more room in a particular area. Select at least two cells and click Table and Merge Cells. Select the merged cell and click Table and Split Cells to reverse it. ▋

Access all of the functions you need from the Table list in the menu bar.

You can add one or more rows before or after the selected row.

BY TOM HANCOCK

Online

Build Your Own Search Engine

Google's Custom Search Engine site puts you in charge of the world's best-known search engine. Best of all, it doesn't cost a dime.

With Google's straightforward customization tool, you can dedicate a custom search engine to any Web site or any topic. It can be limited to finding results at one specific site or a set of sites, or it can search through the entire Internet but favor results that otherwise wouldn't make it anywhere near the top of the list.

Start Your Engine

To begin, point your browser to www.google .com/coop/cse. (To use this Google feature, you'll need to create an account or sign in with an existing Google account.) You can take a look at some examples created by other would-be search engine builders by clicking the Featured Examples link on the left side of the page. When you're ready to try your own hand at it, click Create A Search Engine. The settings you'll use to make your own version of Google are all found on one page, and they're pretty easy to figure out. First, you'll need to enter a name for your search engine and a short description.

Next, enter one or more keywords that will fine-tune your search. At least one keyword is required. You should choose a word or two that describes the general topic focus of the search engine you're building. Try to think of something that you would expect to see in just about every result from this custom search. For example, a customized search about a particular city might include the city name as a keyword. Choose a search engine language and then scroll down to the next section.

Site Selection

Although keywords are important, the Sites To Search field is the meat and potatoes of building a custom search engine. Enter the addresses of the sites you want the search to include, with one site per line. You can skip the "http://" part of the address. If you don't know

Create your own, customized Google by limiting the search engine's results to a particular site or sites.

every site you want to include in this search, you will be able to edit the list later.

Now, choose whether you want your search to be limited to text on the sites you've specified, or whether these sites should merely be favored in an otherwise standard Google search of the entire Web. If you know exactly what you want, and you know which sites have it, the site-specific option is the way to go.

If there's no need to limit the search so strictly, designate the sites as emphasized but not exclusive. This is better for custom search engines with a more general focus. Prioritizing sites makes certain that the top results will be relevant to the topic of your search engine, but it won't rule out similar results from other Web pages.

Test Search

Now, try out your creation. From the main Custom Search Engine page, click My Search Engines. Any search engines you've already created will be listed at the top of the page. Click the Homepage link to use a particular search engine. If you use a Personalized Google Homepage, you can also click the Add To Google icon to put your search engine on your personal home page.

To edit an existing search engine, click the Control Panel link on the My Search Engines page. Here you can change any of the details you previously entered, as well as tweak additional settings. The Code link in the Control Panel provides HTML (Hypertext Markup Language) you can use to add your new search engine to your own Web site. You can also change the appearance of your search engine to a limited extent under the Look And Feel option.

Search engine designers who want to continually refine their search should click the Google Marker link on the My Search Engines page. There you'll find a bookmark to quickly include new sites to your search engines.

Dig through the Google Marker and Control Panel links, and you'll find additional options for customizing your search engine even further. You might begin to feel like a real Google employee yourself. Unfortunately, the customized search engines don't come with company stock options. ∎

BY ALAN PHELPS
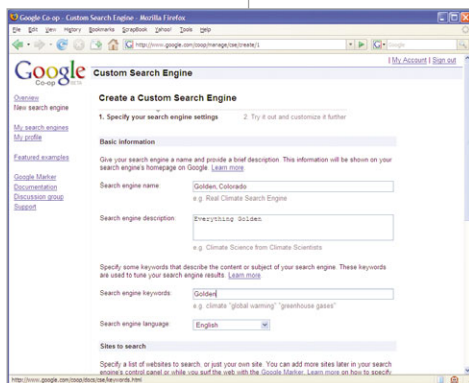
Microsoft Word 2002

Troubleshoot Templates

Templates are great tools for creating documents; they save you from having to reinvent the wheel every time you want to create a document. They are complex tools, however, and problems may arise.

We'll look at a couple of issues you might have had trouble with. A button on a toolbar created to run a macro that was copied from a template created in a previous version of Word may not work. Or you may find all of the elements, such as macros and AutoText, have disappeared.

All documents are based on templates, even if you don't choose one manually. Click File and New to create a new document. The New Document pane opens. You probably click Blank Document in the New section of the pane most times. You are creating a document with the Normal.dot template when you do so.

You can also choose to create a document from another template. There are three selections in the New From Template section of the New Document task pane. Click the General Templates link, and you will see a tabbed dialog box with a variety of templates and template wizards on which to base new documents. Each template contains a unique set of elements. At the bottom right of the dialog box, you can create a new document from a template or create a new template.

You can add templates to the document you are working on via the Templates And Add-Ins dialog box.

The Organizer dialog box lets you copy specific elements between templates.

Old Templates

You may have templates you modified in a previous version of Word that you would like to use in Word 2002. You can use templates from Word 97 and later. Transferring them is straightforward. Copy the old template for use by Word 2002 into the directory C:/DOCUMENTS AND SETTINGS/ *user name*/APPLICATION DATA/MICROSOFT/ TEMPLATES if you use WinXP.

Now you can add elements from the old template to one in Word 2002. Open the old template as you would a document. Click Tools and Templates And Add-ins. Click the Organizer button. The Organizer dialog box appears with four tabs at the top: Styles, AutoText, Toolbars, and Macro Project Items. There are areas in the dialog box for two templates to be open.

The currently open template appears in the drop-down menu on the left. From the right side of the dialog box, open the template to which you want to transfer the old template's elements.

The old template may have elements on any or all of the tabs. Click through the tabs and select any element you want to transfer. A description of the element appears at the bottom of the dialog box.

The Copy button will become active when you click an element. It's important to transfer macros from the old template to the new one. You can transfer a toolbar that contains a button for a macro to a new template, but the button won't work unless you transfer the macro itself.

Disappearing Act

You may have faced the more serious situation when all of the template elements, such as macros, AutoText, and custom toolbars, menus, and shortcut keys, you used with a document have suddenly disappeared when you open the document. This happens when the document can no longer find the necessary template. There are two ways this can happen.

You may have moved the document to a new location that doesn't contain the template you need. Attach the template to the document before you move it to a new PC. With the document open, click Tools, Templates And Add-Ins. Click Add, select the template you need, and click OK twice.

You may also encounter this situation when the necessary template has been moved to a new location on the computer. If you suspect this, click Tools and Templates And Add-Ins with the document open. Click Add, find and select the template, and click OK. The template may have been lost somewhere on the PC, and you can't find it. If so, click Start, Search, For Folder And Files, and Documents and then type *.**DOT** in the Search Field. Click OK. The template document will appear if it is still on the PC.

Templates are highly versatile and can greatly streamline your work. Now you know a couple of ways to find elements that go missing. ▐▌

BY TOM HANCOCK
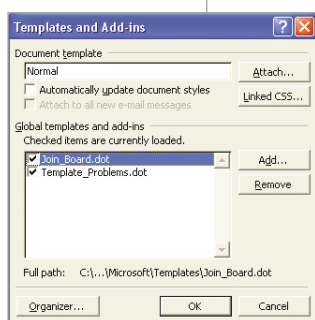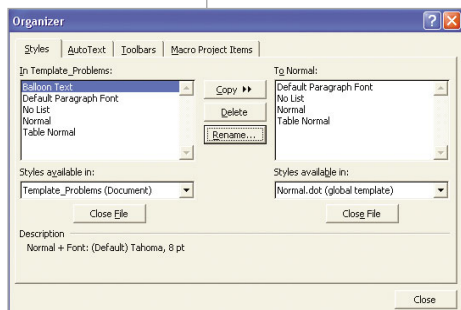
Browsers

Save Research With The Firefox ScrapBook Extension

If your job or a school project requires extensive Internet research, you know that it can be difficult to keep track of all your online sources. With the Firefox ScrapBook extension, you can store copies of relevant information, pages, and entire Web sites in one spot—the same browser window you use to track down answers.

ScrapBook is a free extension for the Firefox browser. You can pick it up at amb.vis.ne.jp /mozilla/scrapbook. If you're like us, you'll be impressed with all of the features packed into this little bit of software.
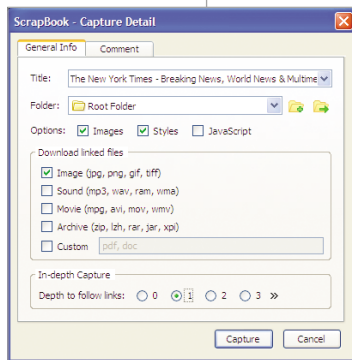
Click & Keep

ScrapBook features a variety of ways to capture Web page information. Probably the most straightforward way is to use the ScrapBook menu that the extension places in the main Firefox toolbar. Choose Capture Page, and ScrapBook does the rest. Capturing a Web page actually does capture the entire page, even if it is too long to fit in a single browser screen.

If you don't need an entire Web page, use the mouse to select text, graphics, or both from a Web page. Then either drag the selection into the ScrapBook sidebar or right-click and choose Capture Selection. You can also capture a Web page linked to the page you're currently viewing. Right-click a hyperlink and choose Capture Link. Dragging the link to the ScrapBook sidebar also works. Right-clicking or dragging will capture individual images, as well.

After you've saved pages, you can access them in multiple ways, regardless of whether you're connected to the Internet. Choose ScrapBook in the ScrapBook menu, and the ScrapBook sidebar will appear on the left side of the screen. The sidebar lists all of your captured pages, along with the folders and subfolders you create to store them.

You can also use the ScrapBook menu to retrieve captured Web pages. Click the menu and you'll find ScrapBook items arranged according to any folders you defined through the sidebar.

When viewing ScrapBook items, be sure to check the toolbar at the bottom of the browser window. There you'll find a button to highlight text in captured pages and another button to

create annotations. ScrapBook also includes an eraser tool you can use to delete selected items to focus in on what you want to keep.

Be Choosy

ScrapBook does more than simple captures of single pages, selections, or images. Try using the Capture Page As command in the ScrapBook menu. Rather than immediately capturing the page, ScrapBook presents a dialog box with several options. For instance, you can choose to capture a page without the embedded graphics, style sheets, or JavaScript code. If you're only interested in a site's text, foregoing these elements will give you a cleaner, simpler capture. You can also choose to download additional portions of the Web site, such as linked videos and sound files.

ScrapBook can also automatically follow hyperlinks on the target page and automatically capture all of those linked pages. The Depth setting specifies how far ScrapBook will go in following links and capturing pages. This command can obviously result in a lot of captures, so think twice before sending ScrapBook off on a capturing spree.

One way to keep in-depth captures under control is to select the desired link level, click Capture, and then click Pause in the dialog box that appears. While the capture process is paused, you can scroll through a list of all of the pages ScrapBook plans to download. If you can tell from the page addresses that there are some you definitely do not want, remove the checkmark next to the address and ScrapBook will skip over that page.

The Filter menu provides options to quickly deselect all of the pages in the list so that you can then select only those you want. If the list of addresses is long, you can experiment with the filtering by domain or string options.

Keep Scrappin'

ScrapBook is one of the best tools we've found for collecting and storing online information. The only downside for some is that it works exclusively with Firefox. If you use Internet Explorer and do a lot of online research, ScrapBook is one more reason to consider switching browsers. ∎

The ScrapBook extension for Firefox provides a central repository for all of your online research.

BY ALAN PHELPS

Corel Paint Shop Pro 9

Create A Panorama

You don't need to spend hundreds of dollars on a true panoramic camera in order to create stunning panoramic photographs. All you need is your trusty digital camera, a copy of Paint Shop Pro 9, and a little knowledge.

Step One: Take Multiple Photos

It's a good idea to use a tripod, but if you don't have one, it's best to rotate your body around the camera and not vice versa. It's also wise to take the photos from left to right so the file names are in a recognizable order. Keep the same camera settings for each shot and try to maintain an overlap of about 25% between shots so you can easily identify common elements within the photographs. (In our example, we'll refer to a horizontal panorama, but you can easily translate the instructions to create a vertical one.) Upload the photos to your PC.
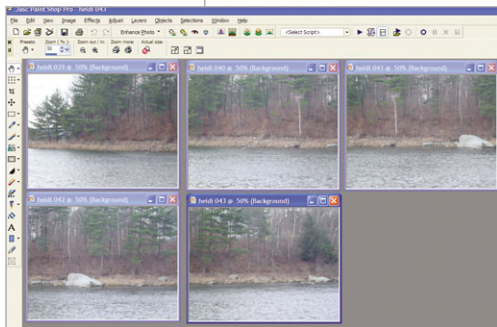
Use Paint Shop Pro to "stitch" individual photographs.

The stitched photographs become one panoramic image ready for cropping.

Step Two: Gather Dimension Data

Open the photos in Paint Shop Pro and minimize all but the first one. Right-click it and select Image Information. Under Image Dimensions, take note of the width and height, in pixels, of the image, which should be the same for each photo. You will use this data to determine the final image dimensions. The height of the final photo will be the same as the height of an individual photo, but the width will be determined by the number of pixels of an individual photo, the percentage of each photo that overlaps with the other photos, and the number of images you will stitch together.

Step Three: Create A Blank Image Template

For our panorama, we took five photos of the Lake Champlain shoreline in northern Vermont, and we overlapped the subjects by roughly 25%. Each photo is 480 x 680 pixels. We'd like the final width to be roughly 80% of 680 pixels multiplied by five photos, or 2,720 pixels. Go to the File menu and select New. Next, input the height (480 pixels) and width (2,720 pixels) and click OK.

Step Four: Combine The Images

Select the first photo in the series and choose Copy from the Edit menu. Click the blank template and select Edit, Paste, and Paste As New Layer. In the Tools toolbar, click the Move tool. Place your pointer on the pasted photo and drag it to the far left side of the template. Select the Pan tool from Tools toolbar. Next, restore the second photo in the series. Copy and paste it as a new layer in the blank template. Select the Move tool again and drag the second photo to the spot where the overlap occurs with the first photo in the series. Repeat this process for each individual photo.

Step Five: Tweak The Output

There's no tool that can "snap" the pixels to the proper spot. But you can use the Zoom feature to rely upon your own keen eyesight to make the overlapping areas appear as seamless as possible. In the Tool Options palette, zoom in until the overlapping images are significantly enlarged. In our example, the initial image canvas was at 37%, and we zoomed to 120%.

Step Six: Crop & Save

The panorama will likely have some white space at the top or bottom. Use the Crop tool to eliminate extra space in the canvas. Save the photo with a .PSPIMAGE file extension to preserve the layers or as another file type, such as JPEG or BMP, which you can then print or email. ▌▌

BY HEIDI V. ANDERSON

Microsoft PowerPoint 2002

Perfect Your Transition Team

In case you think slide transitions aren't all that important, think about the presenters who put all their bullet points on-screen at once. You're too busy reading over the points to hear much of what they say. Or think about the guy who uses a different transition effect for each bullet point. Some dissolve into views; others slide in from right and left. One even has a screeching tire sound effect. Not exactly a power speaker, right?

Slide transitions carry a lot of style points. So try the following tips for making the most of the arrival of each new slide and piece of information.

Scrolling Titles

Even plain old text provides a sense of motion with the right transition effect. Usually, you're not after a zooming action, but a steady motion that brings the slide alive without looking hyperactive. The effectiveness of this trick can vary with your content, but generally, a slide title that scrolls steadily by and then disappears makes your point seem more current and compelling than static text.

Try it by creating a slide title that uses something like 96-point type. Choose Slide Show and Custom Animation. Click Add Effect, Entrance, and Fly In. Under the Speed drop-down box, choose Very Slow. Click Add Effect again and choose Exit and Fly Out. Set the speed to Very Slow and set the direction opposite that of the Fly In Effect. Click Play to see the animations in action. You should see a smooth scroll in which the words appear on the screen and keep moving all the way off the opposite side.

Make the title even cooler with a couple of text boxes that slide past each other. Let's say you're giving a presentation on golf courses. For a section on a course named Buck's Creek in Arizona, you could put "Buck's Creek" and "Arizona" in separate text boxes and have them scroll across the screen in opposite directions. The trick is in the order of the animations (arrange them in the Custom Animation task pane on the right side of the screen) and their timing. Set the two entrance animations to run "With Previous." Set the "Buck's Creek" exit animation to run After

Why use static slide titles when you can add motion to your slides with animations that send words gracefully sliding past each other?

Previous and the "Arizona" exit animation to run With Previous.

Dramatic Photos

You don't need a lot of animation skill to make your photos more dramatic—just some creative use of PowerPoint's animation tools.

For example, it's easy to create compelling slides with photos that fade into view and then fade away as the next photo comes in. (Set it to music, and you'll really impress people.) To do this, apply a Fade entrance effect at Very Slow speed. Set the next photo to fade in After Previous. Then insert a Fade exit effect for the previous photo with a With Previous setting.

You can create a sense of evidence piling up by having photos stack up on the screen. Insert the photos one at a time. Add a transition effect to each one such as flying in from the bottom. Place the photos on top of each other and rotate each one at a slightly different angle to give the look of a random stack. (Adding a thick white border to each shot reinforces the effect of snapshots piling up. Right-click the photo and choose Format Picture and the Colors And Lines tab.)

Need more interest? Make like half the documentary makers of the last 20 years and steal a page from Ken Burns' playbook. Remember how Burns turned still Civil War photos into dramatic TV by panning the camera across them? PowerPoint lets you do something similar. Size your photo to fill the entire slide. Click Add Effect, Emphasis, and Grow/Shrink. Choose a speed of Very Slow, and under Size, enter a setting such as 150%. Set the animation to start With Previous, and it will seem like you're zooming in on your photo.

Another way to build drama is with dramatic zooms into specific parts of a photo, such as the key building in a skyline photo. Set the photo to appear when the slide does. Then add an Emphasis effect of Grow/Shrink at a Very Fast speed to a size such as 200%; set it to start On Click. To highlight part of the photo, add a red circle that's set up via an Entrance effect to appear after the zoom occurs (use the After Previous setting). Try it; you'll feel just like an FBI agent pinpointing the bad guy in the photo in a meeting with your bosses. ▐▐

BY TREVOR MEERS

Search The Tech Support Center

Computers, printers, and other technology are wonderfully helpful tools—when they're working properly. But there's nothing more frustrating than a computer that won't boot up or a printer that won't, well, print! Even more frustrating is not knowing where to find answers.

Now it's easier than ever to find the information you need by searching SmartComputing.com's Tech Support Center. Simply enter a word in the search box, and you'll find information on that topic from all areas of the Tech Support Center. Topics ranging from hard drives and printers to the Blue Screen Of Death and that pesky red X are all covered in an easy-to-understand problem/solution format. Accessing this information is simple—here's how:

1 Go to SmartComputing.com and click the Tech Support Center link.

2 Enter a subject in the search box. Avoid using words such as "problems" or "malfunction," and use the Top Subjects links whenever possible.

3 Read through each section to find numerous articles on your search topic.

Subscribers, keep in mind that you can save your favorite articles in your Personal Library to use for future reference. Simply log in, and, when you find an article you would like to keep, click the Add To My Personal Library link at the top of the page. Create as many folders as you like to keep your information organized and accessible.

St. Patricks's Day

In honor of St. Patrick's Day, we searched for the quintessential Irish brew, Guinness, in our archives. It showed up a mere 7 times, referring each time to the tome of world records, not beer. The word "beer," however, has about 93 mentions.

iTunes

iTunes was bogged down in the days following Christmas, what with new iPod owners merrily purchasing tracks to listen to. For information on all things iPod, check out our July 2006 *Reference Series* issue, which covered the ins and outs of these miraculous little devices.

Read Up

When that new gadget or program starts acting up, it's pretty easy to get frustrated and just start pushing buttons. It may seem obvious, but take a minute and read the users manual or help file. Nine times out of 10, you'll find the answer you're looking for—and much more quickly than you would by pressing random buttons.

Take a look into the future: In the upper-right corner of the SmartComputing.com home page are links to several articles from our next issue. They'll sate your *Smart Computing* appetite until your next issue lands in your mailbox.

Quick Tips

Secrets For Succeeding In Common Tasks

BY STEPHEN J. BIGELOW

Multicore Processors

Question: One of my programs is crashing because of the dual-core CPU in my new PC. Is there any way to only use one of the CPU cores?

Answer: Some older programs may behave strangely or unexpectedly cause a CTD (Crash to Desktop) when run on a newer dual- or quad-core processor. If you suspect that this might be the case, your first step should be to check with the software manufacturer to verify this issue and see if a patch or update is available to fix it. In most cases, you can download and install a patch directly from the manufacturer's Web site.

If there's no patch or update available, use the Task Manager to reconfigure the program. With the program running, press CTRL-ALT-DELETE to open the Task Manager. Your program should appear listed in the Applications tab. Right-click the program entry and click Go To Process—this will highlight the program in the Processes tab. Right-click the process and click Set Affinity. A new dialog box will open that controls the CPUs that the process can run on. Deselect one of the CPUs and click OK. Now the program will only be running on the remaining CPU core.

In some cases, you might also want to adjust the priority of the process. Right-click the process and click Set Priority. Now select the processor priority for that program. Remember that changing the priority may also cause erratic behavior in some programs, but go ahead and experiment if you wish. Remember that these changes are not saved when you exit the program, so you'll need to reselect these setting changes each time the troublesome program launches.

Audio

Question: I don't want to play all of my media through Rhapsody. How can I stop Rhapsody from launching each time I double-click a media file?

Answer: This takes a few quick changes to Rhapsody's preferences. Launch Rhapsody normally. Click Tools, Preferences, and select Media Types from the left pane. A dialog box opens showing each of the media types that Rhapsody will launch with. Deselect each of the media types that you want to disassociate from Rhapsody. For example, if you don't want Rhapsody to launch and play MP3 files, deselect the MP3 checkbox. Remember to click OK to save your changes. You can always reselect media types at a later time if your needs change.

Microsoft Word 2003

Question: I'm editing a colleague's memo. Why is every sentence of a paragraph indented except the first sentence?

Answer: It's probably because your colleague has selected the hanging indent format for those paragraphs. Place your typing cursor within one of those paragraphs, right-click the paragraph, and then select Paragraph from the menu. In the Indentation section, look for the Special entry, and select None from the drop-down menu. When you click OK, the entire paragraph should move to the left margin. Repeat this for every paragraph with a hanging indent.
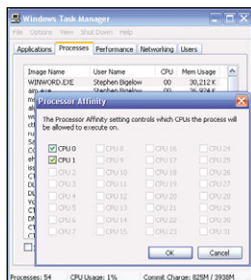
Change the CPU affinity so that some older programs will only work through one core of a multicore CPU.
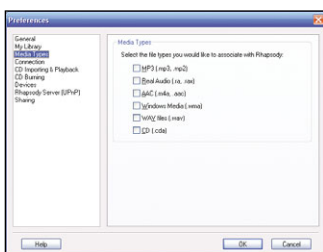
Select the file types that Rhapsody will automatically work with by default.

Add or remove hanging indents in a paragraph by right-clicking a paragraph and selecting Paragraph from the menu.

Microsoft Word 2003

Question: I hate counting spaces when I edit documents. Is there any way to guarantee that there is only one space after punctuation?

Answer: An easy way to visually count spaces is to have Microsoft Word insert spacing marks into the document. Open your document and click Tools, Options, and select the View tab. Select the Spaces checkbox in the Formatting Marks section

Use the View options in Word to see various attributes of the document, such as spaces or paragraph marks.

and click OK. Now Word will insert marks for each space—this should make double spaces and other odd spacing easier to see. Just return to this dialog box and deselect the Spaces checkbox when you want to remove the marks.

Another convenient way to guarantee single spacing throughout a document is to place your typing cursor at the beginning of the document, open the Edit menu, and select Replace. In the Find And Replace dialog box, type two spaces in the Find What field and type a single space in the Replace With field. Click the Find Next button to locate each double space occurrence and click Replace, or simply click Replace All to search for and replace all double spaces throughout the entire document.

Memory

Question: Should I splurge for a new PC with 2GB of RAM or stick with the system's standard 1GB?

Answer: Memory is always a good thing, but it's not always an urgent thing. If you're doing everyday work such as surfing the Web and checking email, 1GB of RAM should be more than enough—if you run short of RAM, WinXP

will use space on your hard drive (known as virtual memory), though performance may suffer slightly. However, high-end software such as modeling, video and image processing, and sophisticated gaming can benefit from 2GB of RAM. Yes, the additional memory can raise the price of your new PC, but the performance gain is almost always worth the price and the additional RAM will be covered under the system warranty.

Remote Backup

Question: What is a remote backup service? How does it work? Is it worth using such a service for my important work?

Answer: A remote backup service simply uses your broadband Internet connection to copy selected file(s) to storage space on a server that is owned and operated by a third-party company. In most cases, you pay a monthly fee to rent some amount of storage and then use a client software application to move the files that you want to protect. EVault (www.evault.com) is one example of this type of service. Pricing can vary dramatically

depending on the amount of storage and the level of service that is needed.

It's hard for ordinary individual PC users to make a case for remote backup services because there are so many other backup options available, such as thumb drives, CDs and DVDs, and external USB hard drives. However, businesses of all sizes have a serious need to protect their critical data against fires, thefts, floods, earthquakes, and other disasters—this often means having a working copy of their important data offsite at a distant location.

Uninterruptible Power Supplies

Question: How long will my PC run from a new battery backup? Can I run my laser printer using the battery backup, too?

Answer: A battery backup, or UPS (uninterruptible power supply), should be sized to meet the power demands of your particular PC and monitor for about 10 to 15 minutes. Most power backups have a chart on the box that tells you how long the unit will run for a given PC/monitor

load, so be sure to check the box before making a purchase. Remember that the idea is to shut down the PC in an orderly manner to prevent data loss, so you really only need a few minutes.

As a rule, do not power a laser printer from the UPS. Laser printers take a lot of power and will shorten the UPS running time dramatically. Instead, connect the printer to one of the surge-protective outlets that are often included on UPS units.

Compiled by Kylee Dickey
Graphics & Design by Lindsay Anker

Mighty Mice That Save The Day

Innovative Designs Prevent RSIs

The first mice were rectangular little boxes designed for functionality and ease-of-use rather than for comfort. As personal computers became a staple in more homes and businesses, however, the importance of comfortable computing increased. In the late 1980s, the first ergonomic mice appeared on the market. These mice were not what we could consider ergonomic today. However, at the time, they were groundbreaking, because they were curved so that they would better fit the palm of the hand than earlier, box-shaped mice did.

Today's ergonomic mice are sculpted to truly fit the hand, not only the palm but also to accommodate the natural resting position of the fingers and thumb. Some mice, in fact, have completely broken the mold of the traditional mouse. Some of these mice stand upright, are shaped like joysticks, have different types of buttons, and even leave the desktop and operate in midair!

Some of the changes that make mice ergonomic are more subtle. A mouse that very much resembles a traditional mouse may feature button functions that reduce the number of movements a user must make with her arm or fingers.

A few ergonomic mice, such as Evoluent's VerticalMouse 2, 3M's Ergonomic Mouse, and the Aerobic Mouse, make computing more comfortable by ensuring that you hold your arm and hand in a natural position.

Usually, when you use a mouse, the bones in your forearm twist, one over the other. This is not a natural position for your arm, and over time, it can lead to strain. When you use a mouse that is aligned vertically, the bones in your forearm remain aligned in a neutral, natural position.
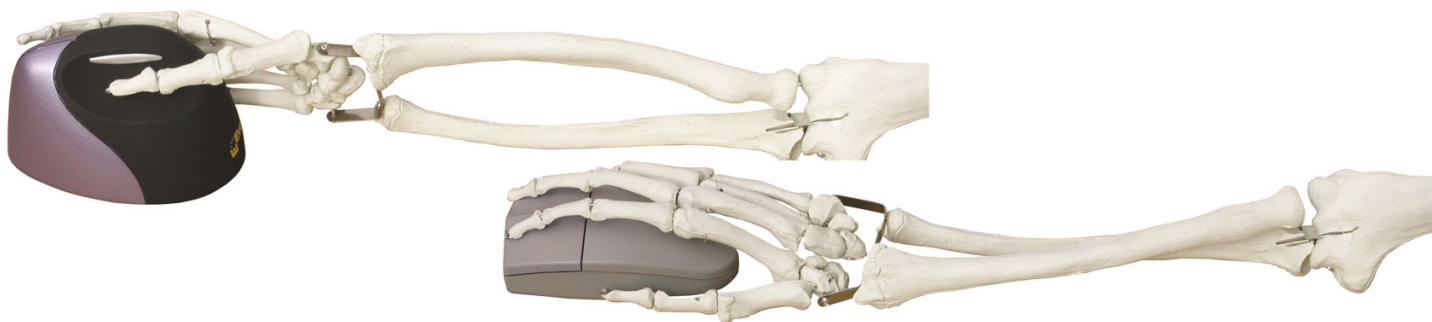
VerticalMouse2

The Zero Tension Mouse is based on the same vertical-design concepts. However, in addition to keeping the bones and muscles of your forearm properly aligned, the Zero Tension Mouse also keeps the flexors (muscles on the inside of your arm and palm) and extensors (muscles on the outside of your arm and hand) balanced so that neither is overly fatigued. Also, with this mouse, your arm is in a neutral position so that you don't support the weight of your hand and arm with the muscles in your shoulder and neck.

Perific Mouse

The Perific Mouse is unique in that it provides you with several options for comfortable mousing. This mouse recognizes that just as important as comfortable hand positions is a variety of movements. There are several ways to use the Perific Mouse, and you can switch modes. Use it like a standard mouse for a while. Then flip it on its side and use it like a trackball for a while. When you need some variety to reduce fatigue in your arm and hand, you can even leave the mouse draped over one of your hands while you type.
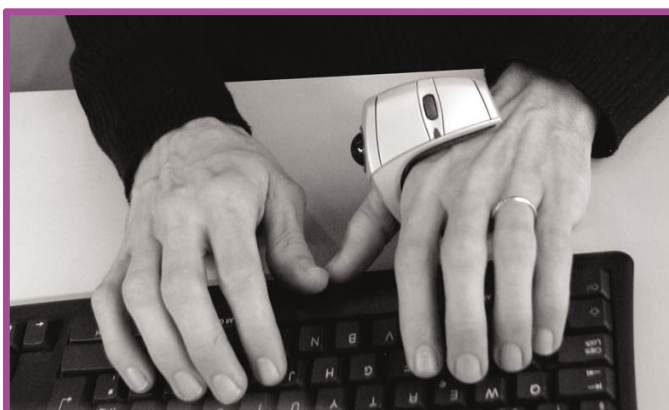
There are also mice that are built for comfort, although they may not be designed for long-term use. For example, the RocketMouse is a tiny device shaped like a large, fat ring. You slide it over your index finder, and you use your thumb to control the trackball on the top of the RocketMouse. To click, you can squeeze a trigger inside the ring of the RocketMouse with your index finger, or you can use your thumb to click the left or right buttons on the top of the RocketMouse. This type of mouse is not ideal for long-term computing, but it can save you considerable strain from reaching across the desktop frequently for your mouse. An ideal use for this mouse is to use it to navigate Web pages when you read your RSS (Really Simple Syndication) feeds or as you research a topic on the Web.

The Gyration GO 2.4 Optical Air Mouse is another mouse that is ergonomic when used in the right conditions. What makes this mouse unique is that you don't need to twist your hand or exert any force to push the mouse across the desktop. Instead, you use the mouse in midair. The Air Mouse actually registers movements based on gyroscopic technology. This type of mouse isn't for everyone, and comfort relies on holding the mouse in the air without tensing or stressing the muscles of your upper arm. Again, this isn't a mouse to use for extended periods of time, but when you need to give a presentation or simply switch tracks in iTunes or open a file, it can reduce strain on your arm: You can keep your arm in a neutral position and just wave the Air Mouse in the direction that you want the pointer to go.

GO 2.4 Optical Air Mouse

RocketMouse

What To Do When . . .

Your Desktop Background Images Disappear

O ne question that naturally arises with the popularity of digital cameras and camera phones is what to do with all the photos.

Besides filling up album after album, you can use your digital images to add a little flair to your computing experience. You can customize the Desktop background—the image or solid color behind the icons—with your own images instead of limiting yourself to the background images that come with Windows.

As with every other aspect of computing, it's possible to encounter problems with your Desktop background image—particularly with files that disappear from the Background image list. (You can see this list by right-clicking a blank area of the Desktop and choosing Properties from the pop-up menu. From the Display Properties dialog box, click the Desktop tab.) If you've had files mysteriously disappear from this list, here's what to do.
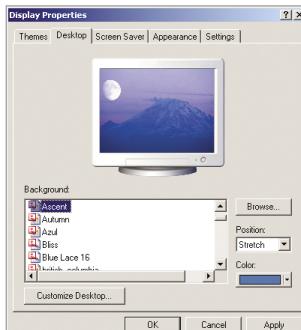
In the Display Properties dialog box, click the Desktop tab and use the Browse button to import your own images to the Background list.

Start Browsing

The Background list contains the names of images that you can use as the Desktop background. Regardless of the Windows version you use, you should have a choice of images that come with the operating system. In our version, Windows XP Home Edition with Service Pack 2, we have 31 images provided by Microsoft.

Using the Browse button, you can import an image from any location on your computer, such as the My Pictures folder or a CD. Once

you choose another image to use as your Desktop background, that file name will appear in the list under Background.

However, that image file name may not stay on that list. On our system, for example, WinXP gives the boot to an imported image from the list once we set another image as the background, whether the new background is another imported image or one from the list. So if we want to go back to that first imported image, we have to use the Browse button to find it again and reopen it. It will then reappear on the list—and will stay there—as long as we keep that image as the background.

The default images Windows gives you to use for the Desktop background are stored in the C:\WINDOWS folder. We experimented by placing our own photos in that folder and then importing them into the Background list. However, once we changed the image, our imported images—even though they were stored on the hard drive in the same folder as the default images—no longer appeared in the list.

If you experience similar behavior with your version of Windows, one solution is to browse every time you want to use an image other than the default ones supplied.

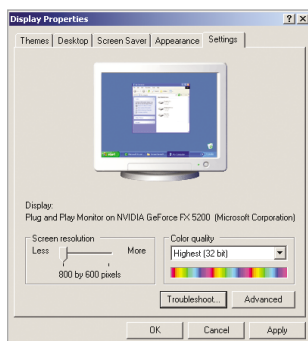### Clean Out The My Pictures Folder

We must add a very important detail to everything we just told you about the Background list, which works in conjunction

with the My Pictures folder. As some *Smart Computing* readers have discovered, the Background list—which by default lists the files included in the My Pictures folder—has a limit to the number of files it can display. One reader discovered that his Background list could display only 102 images. Once the number of images in his My Pictures folder pushed the total number of files in the Background list past 102, Windows "kicked out" all the non-default images from the list.

Because the My Pictures folder on our system was bulging with hundreds of digital images that weren't listed in the Background list, we assumed that our Background list had a limit. We were curious to find out what it was. So we created a new photo folder on our system and transferred all but about 30 of the images in My Pictures to the new folder. Sure enough, once the transfer was complete, the images left in My Pictures showed up in the Background list, bringing the total number of images in that list to a little more than 60.

But the limit in our Background list turned out to be greater than 102. In fact, we pushed it to 125 with no problem. Once we added a folder with 25 more images, however, the Background list dropped all the imported images.

We also discovered that any images not stored in My Pictures, even if the number of images in that folder kept the Background list under the minimum, did not remain in the Background list once they were deselected as the chosen background image. To appear in the Background list, image files other than ones provided by Windows

If your background image isn't displaying properly, try changing the display's screen resolution or color settings.
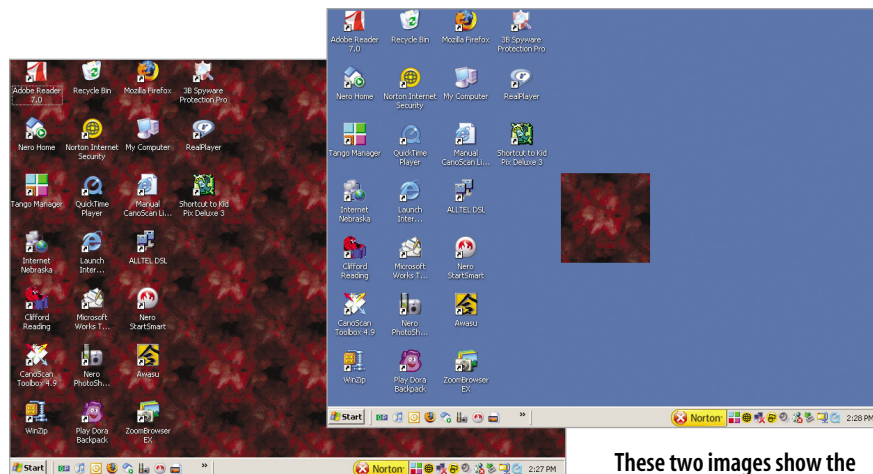
must reside in the My Pictures folder.

So, another possible way to keep images from disappearing in the Background list is to clean out the My Pictures folder so that it holds no more than whatever the limit on your system may be. If you're an avid digital photographer who stores lots of images on your PC, staying under this limit or transferring them to another folder may be more of a hassle than browsing for an imported image every time you want to change the background. The choice is yours.

Repair A Corrupt File

You no doubt take precautions to prevent infection from a computer virus, but sometimes a good defense fails. Files can become corrupted from a virus, or they can be rendered unusable by an incompatible program.

If the image you want to set as the background is on your system but won't appear when you try to open it, try resaving the image, whether from a CD, your digital camera, or the Web site from which you downloaded it. Make sure you delete the old image

first. You also could try moving the image from its current location on your system to another folder.

Check The Display Settings

Occasionally, you may encounter a display problem with a background image. While the image file is listed under Background, it may not look right once you select it as your default Desktop background.

If this happens, click the Settings tab in the Display Properties dialog box. Try changing the Screen Resolution or Color Quality settings. The higher the resolution, the crisper the image will look. However, increasing the resolution will render everything on your display a little smaller, including the Desktop icons. Click Apply to view

These two images show the difference between centering and tiling an image when used as the Desktop background. Graphics often display best when tiled, but images from a digital camera usually display best when stretched or centered.

how the changes you've made affect the display. If they don't improve it, revert to the original settings.

Finally, check the Position setting on the Desktop tab. The choices are Center, Tile, and Stretch. Stretch is usually the best option, but sometimes that setting can distort images. Experiment with the Position settings until you find the best fit. ▮

BY RACHEL DEROWITSCH

The Wandering Operating System

Do Some Apps Require Windows To Be On Drive C:?

There are very few things PC software developers can take for granted. They must account for millions of hardware combinations, dozens of variants of Windows, and an infinite variety of other problems that may arise from conflicts with other software already installed on the computer. The one thing they can count on, however, is that Windows will be installed on the computer's C: drive.

Or can they? Some versions of Windows, such as Windows 98 or Windows Me, must be at least partially installed on the C: drive in order to function, but newer versions such as Windows XP can be installed on any drive, and on rare occasions, this can cause software conflicts. To avoid this trouble, it is important to understand how drive letters work and why the C: drive is often the best option when installing Windows.

Alphabet Soup

An empty hard drive fresh from the assembly line is a true blank slate. It can store any type of data, but it must be told how to store it before it will work with any operating system, including Windows. This is done by formatting the drive, during which a file system is applied that tells the drive how to organize data. In most cases, the entire drive is formatted using a single file system and has a single letter assigned to it, but it also is possible to divide the available space into several different sections, each with its own separate file system and drive letter. Each separate section is called a partition.

WinXP handles two main types of partitions. Primary partitions can contain both Windows files and other files, and those that contain Windows files are called system partitions. On some computers, there is a separate primary partition that contains only the Windows files that are used to boot the operating system, and this is called a boot partition. Computers that use a boot partition store other Windows files in a system partition, meaning they have a minimum of two primary partitions.

Partitions that can't contain Windows files are called extended partitions. Assigning a drive letter to an extended partition turns it into a logical drive. This can cause a lot of confusion because although logical drives look like separate hard drives in Windows and Windows treats them as separate hard drives, all of those logical drives may be located on the same physical hard drive. For example, if you see hard drive icons labeled C:, D:, G:, and H:, all of those drives may just be partitions on a single hard drive instead of residing on separate physical hard drives.

You can open My Computer in WinXP to see how many hard drives a computer has, but the only way to find out if they are physical drives rather than logical drives (outside of opening the computer's case) is to access WinXP's Computer Management utility. To do this, click Start, click Control Panel, click Switch To Classic View (if necessary), and double-click Administrative Tools. Double-click the Computer Management entry, click the plus sign (+) to expand the Storage entry, and click Disk Management. All of the physical drives are listed here, and you can look at the display to the right of each drive to see exactly how it is partitioned. Each partition is color-coded, and you can use the key at the bottom of the window to determine what type of partition it is. You can tell what partition holds Windows by looking for a primary partition that is labeled System and/or Boot. If the system partition is not labeled C:, then Windows is not stored on the C: drive and some programs may have trouble finding it.

Why Not C:?

There are several reasons that Windows is sometimes not installed on the C: drive. Most often it is because the person using the computer was running an operating system
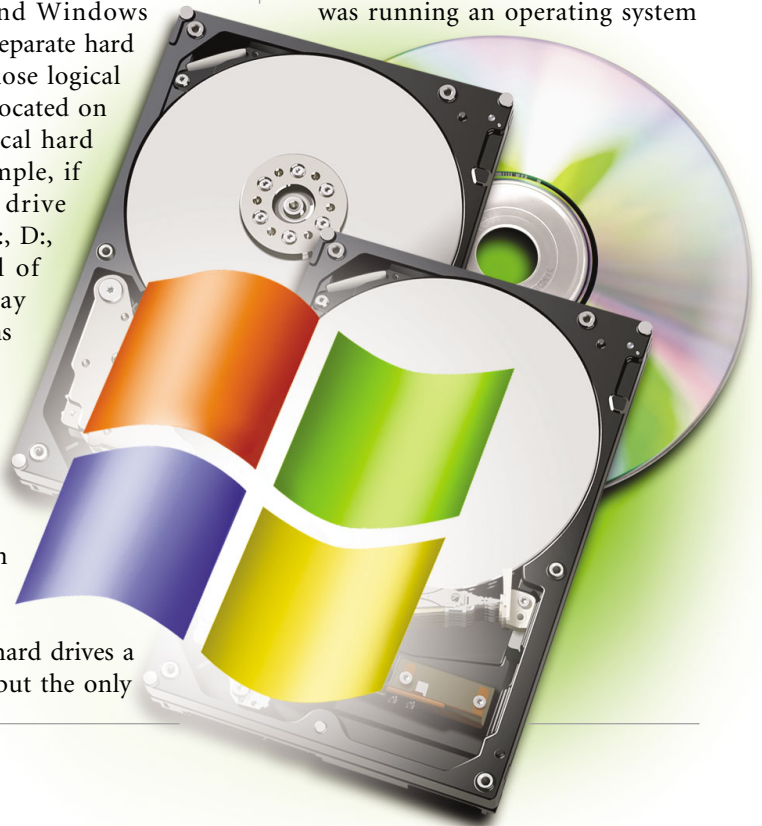
other than Windows on C: (for instance, Linux), and Windows had to be installed on a different drive. Sometimes Windows is installed on a drive other than C: by mistake. Maybe a user configured his drives improperly when installing them, maybe he mistakenly chose the wrong drive while installing Windows, or maybe there was some oddity that caused Windows to install in the wrong place. One of the best examples of this last scenario is a strange glitch that happens when users install Windows XP Professional or Home Edition on a computer that has a Zip drive already attached to it (a Zip drive is a removable storage device). When this happens, the Windows setup utility may mistake the Zip drive as a hard drive and install Windows on a drive other than the C: drive. The only way around this problem is to detach the Zip drive and reinstall Windows.

If Windows is installed on a drive other than C:, there unfortunately is no easy way to move Windows to the C: drive. The Disk Management tool lets users change drive letters for logical drives but not for system partitions, making it impossible to simply switch the Windows drive to C:. If you don't want to invest in third-party software, the best workaround is to back up all of your important files to a recordable CD, DVD, or other media, reformat (and potentially repartition) the hard drive, reinstall Windows so it is on the C: drive, and then reinstall all of your other software. This is a complicated process that puts your data at risk, so be sure to read a detailed guide such as the March 2006 *Smart Computing* article titled "Start Over" before attempting it.

Utilities such as Norton Ghost 10 ($69.99; www.symantec.com) let you copy the entire contents of a hard drive to another drive, which would let you copy Windows to the C: drive from any other drive or partition very easily, but this may be more trouble than it's worth due to potential file dependency problems.

Down The Wrong Path

Sometimes (but rarely with consumer software) programs use files that are installed as part of Windows, and when Windows is not installed on C:, that software may not know where to look for those crucial files. For example, many applications must access files stored in a Windows folder called i386 that normally is installed in C:\i386 (this is known as the path). If Windows is installed on the D:, drive, the path to i386 changes to D:\i386.
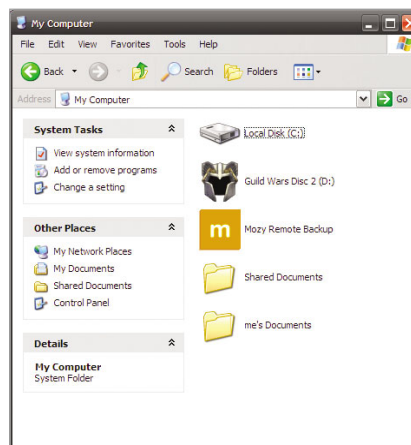
My Computer tells you how many logical drives you have, but those aren't necessarily separate physical hard drives.

Software that is designed to look for C:\i386 can't find it and crashes or generates an error message.

Because so many programs rely on files in the i386 folder, one of the easiest ways to avoid problems when Windows is installed on a drive other than C: is to copy that entire folder over to the C: drive. To do this in WinXP, click Start, click My Computer, double-click the icon for the C: drive, and double-click the icon for the drive where WinXP is installed. When that window is opened, double-click the icon for the C: drive. Move the windows so they are side-by-side, place the mouse cursor on the i386 folder, hold down the right mouse button, drag the i386 folder to the C: window, and release the right mouse button.

When the context menu appears, select Copy and the problematic software should now work.

Most software is designed to create the proper path to Windows and other files wherever they may be installed, and often that path information is stored in an initialization file. If you use a third-party utility that copies Windows to the C: drive from a different drive, the path information stored in those initialization files is no longer valid; and although Windows is where you want it to be, many programs may no longer work. If this happens, uninstall each problematic application using the uninstall utility it came with or remove it by clicking Start, clicking Control Panel, and double-clicking Add Or Remove Programs. Reinstall the software, and it should generate the proper paths to the (now relocated) Windows files it needs. You can also visit the software publisher's Web site or contact its technical support team to see if there is a way to manually edit the initialization files.

Don't Panic

Fortunately, most WinXP users will never have to worry about whether the operating system is installed on the C: drive because none of the popular applications, utilities, games, or productivity software we tested cared where WinXP was installed. However, as a general rule it is best to install Windows on the C: drive when starting from scratch to avoid trouble with legacy applications (or the odd modern program that assumes Windows is located on C:), but don't start preparing for the whole backup/wipe/reinstall nightmare unless your favorite programs truly think Windows is missing. It's nice to know how primary and extended partitions work when setting up hardware and installing Windows for the first time, but this is one of those rare PC problems that you likely need never worry about. ‖

BY TRACY BAKER

EXAMINING ERRORS

BY JEFF DODD

Problem: Following a hard drive upgrade and Windows XP installation, a reader receives an error message that prevents him from using his Compaq Armada 1750 notebook PC. He tried to resolve the issue by running the setup software that came with his computer, but the error persists. He reports that the CMOS (complementary metal-oxide semiconductor) battery is OK.

Error message: "162: System options not set."

Solution: Problems of this nature typically trace back to the BIOS (Basic Input/Output System). In this case, we assume either WinXP or the reader's new hard drive conflicts with an existing BIOS setting. The first thing the reader should do to resolve the issue is restore the BIOS to its default settings. He can access the BIOS setup utility by pressing a specified key—probably the DELETE or F10 key—as soon as the computer starts and then locating the restore default settings option (it's usually grouped with the Exit and Save options). After saving the changes, the reader should reboot the PC.

If that doesn't work, we recommend upgrading the BIOS. The reader's computer is quite old. It's possible the old BIOS can't handle the new hard drive and/or WinXP. He should contact the manufacturer to obtain a BIOS that supports WinXP. Installing this software may do the trick. ∎

Problem: Ever since her husband used her computer, a reader receives an error message that locks up WinXP.

Error message: "0x745f2780. Referenced memory at 0x0000000. This memory could not be read."

Solution: This error relates to the Automatic Updates feature in WinXP. One way the reader can resolve the issue is by deactivating Automatic Updates. To do so, she should open the Start menu, right-click My Computer, and select Properties from the pop-up menu. On the Automatic Updates tab of the resulting System Properties dialog box, she should select the Turn Off Automatic Updates option and click OK.

The only problem with this solution is that Windows will no longer update itself automatically. This means the reader must remember to update her PC manually at least once per month. If the reader wants to avoid manual updates, she can try an alternative solution. This solution requires her to open the Start menu, select Run, type **services.msc** in the Open field of the resulting Run dialog box, and click OK.

In the resulting Services dialog box, she should locate and double-click the Automatic Updates entry. The Automatic Updates Properties dialog box will appear. The reader should access the Log On tab and make sure Local System Account is selected and Allow Service To Interact With Desktop is deselected. She also should verify that the service is enabled for the current hardware profile. If it isn't, she should highlight the profile and click the Enable button. She then should access the General tab and set the Startup Type field to Automatic. She also should click the Start button if the service is currently stopped. She can click OK to close the Automatic Updates Properties dialog box.

Next, the reader needs to locate the Background Intelligent Transfer Service, or BITS, entry in the Services dialog box and repeat the aforementioned steps to enable and start it. She can reboot the computer when the process is complete.

The reader needs to reregister the files associated with Automatic Updates. She can do so by opening the Start menu, selecting All Programs, Accessories, and clicking the Command Prompt option. In the resulting Command Prompt window, the reader should type the following commands, pressing ENTER after each one:

```
regsvr32 wuapi.dll
regsvr32 wuaueng.dll
regsvr32 wuaueng1.dll
regsvr32 atl.dll
regsvr32 wucltui.dll
regsvr32 wups.dll
regsvr32 wups2.dll
regsvr32 wuweb.dll
net stop wuauserv
exit
```

Next, the reader should open the Run dialog box, type **%windir%** in the Open field, and click OK. In the resulting folder, she should locate and right-click the Software Distribution folder, select Rename, type **sdold**, and press ENTER. She then should return to the Run dialog box, type **net start wuauserv** in the Open field, and click OK. The problem ought to be eliminated after she reboots the system. ∎

Problem: When a reader tries to install a program, she receives an error that prevents her from completing the installation. She is not running her computer in Safe Mode.

Error message: "The Windows Installer Service could not be accessed. This can occur if you are running Windows in safe mode or if the Windows Installer is not correctly installed."

Solution: The reader cannot load new programs on her system because the Windows Installer, a program that governs the installation of software in Windows, appears to be inaccessible or damaged. The first step in resolving the issue is to ascertain the location of the Windows Installer file on the hard drive. The reader can do this in WinXP by opening the Start menu and clicking the Search option. In the resulting Search Results window, she should select All Files And Folders, type **msiexec.exe** in the File Name field, and click Search. When the search is complete, the reader should write down the precise location of the Msiexec.exe file on her system.

Next, she needs to check the location of the Windows Installer in the Registry. She can do so by opening the Start menu, selecting Run, typing **regedit** in the Open field, and clicking OK. The Registry Editor will appear. She should open the HKEY_LOCAL_MACHINE\SYSTEM\CURRENTCONTROLSET\SERVICES\MSI Server key and verify that the corresponding ImagePath value points to the correct location of the Msiexec.exe file on the hard drive (as determined by the previous search). If it does not, the reader should right-click ImagePath, select Modify from the pop-up menu, and edit the resulting Value Data field so that it points to the correct location of Msiexec.exe (she should not delete or modify the /V switch that follows the file name). When the changes are complete, she should click OK and close the Registry Editor.

The third step is to restart the computer in Safe Mode and reregister the Msiexec.exe file with Windows. To do so, the reader should shut down the computer and then restart it. As soon as it starts to boot, she should press the F8 key to access the Windows Advanced Options Menu. She then should select the Safe Mode option and press ENTER. If prompted to select an operating system, she should specify Windows XP and press ENTER. When Windows opens in Safe Mode, the reader should access the Run dialog box, type **msiexec /regserver** in the Open field, and click OK. She then should reboot the computer into Normal Mode.

At this point, we suggest the reader try to install a program. Hopefully the installation will be a success. If it isn't, she needs to reinstall the Windows Installer. The first step involved in a reinstall is to rename the old Windows Installer files. To do so, the reader should open the Start menu, select All Programs, open the Accessories folder, and click the Command Prompt option. In the resulting Command Prompt window, the reader should type the following commands, pressing ENTER after each one:

```
attrib -r -s -h
c:\windows\system32\dllcache
    ren msi.dll msi.old
    ren msiexec.exe msiexec.old
    ren msihnd.dll msihnd.old
    exit
```

(*NOTE: The preceding commands assume the reader's copy of WinXP is installed on the C: drive. If it is not, the reader should modify the ATTRIB command so that it references the correct drive letter.*)

After restarting the computer, the reader must download the new Windows Installer. She can get it by visiting www.microsoft.com/downloads/details.aspx?familyid=889482FC-5F56-4A38-B838-DE776FD4138C&displaylang=en and following the on-screen instructions. When the installation is complete, the reader should restart her computer. The error should be gone for good. ❚

FAST FIXES

Microsoft Digital Image 2006 Update

Problem: Microsoft has identified some compatibility problems in its Digital Image 2006 Suite and Microsoft Digital Image 2006 Standard, which may cause software conflicts when installed on a Windows Vista system.

Resolution: Download and install a 21.3MB update that resolves compatibility problems. Go to Microsoft's Download Center at www.microsoft.com/downloads and type **Digital Image 2006 Update** in the Search field and click Go. Click the Digital Image 2006 Update link to proceed to the download page for the update. To start the download, click the Download button. When prompted, choose to save the file to your hard drive. Once the download is complete, locate the file, which is named Update.exe, and double-click it to start the installer. Follow the on-screen instructions to install the update.

www.microsoft.com/downloads

CyberLink LabelPrint 1.4.124.1

Problem: CyberLink's LabelPrint software did not support LightScribe printing for several CD/DVD burners with LightScribe technology.

Resolution: Download and install an update which adds LightScribe support for LightScribe-enabled disc burners. Go to CyberLink's Downloads page at www.cyberlink.com/multi/download/download.html and scroll down to the Backup And Burning section. Find the listing for CyberLink LabelPrint and click the blue Patches icon for CyberLink LabelPrint. Find the patch labeled 2006-11-02 and click the Click Here link for that patch. Click the red Download button. When prompted, choose to save the file to your Desktop. After you've downloaded the patch, locate the file on your Desktop and double-click the file, which is named LightScribeHost-Software1.4.124.1.exe to launch the installer. Follow the on-screen instructions to install the LabelPrint patch.

www.cyberlink.com/multi/download/download.html

Adobe Camera RAW 3.6

Problem: Some newer cameras are not supported by Adobe Camera RAW 3.5. Therefore, you cannot display or edit RAW files from those cameras in Adobe Photoshop or Adobe Photoshop Elements.

Resolution: Download and install the Adobe Camera RAW 3.6 update for Adobe Photoshop CS2 (Creative Suite 2) or later or Photoshop Elements 3 or later. This update includes support for RAW image files from many newer camera models. Go to www.adobe.com/support/downloads and click the New Downloads link on the left side of the page. Find the Photoshop section and click the Camera RAW 3.6 Update link. Make sure you select the Camera RAW 3.6 Update that is listed under Windows and not under Macintosh. The information on the resulting page lists the cameras for which Adobe Camera RAW has added support. If your camera is listed, you should install the update to add RAW file support for your camera. Scroll down to the File Information box and click the Proceed To Download button. When prompted, save the file to your Desktop. Next, right-click the Start menu and click Explore. Type **C:\Program Files\Common Files\Adobe** in the Address field and click Go.

If you're using Photoshop, look in the right pane and double-click the Plug-Ins folder. Then double-click the folder of your version of Photoshop (for example, CS2). Finally, double-click File Formats. Drag the file named CameraRaw.8bi from the right pane of the Explorer window to any location except for the Desktop, because this file has the same name as the one you downloaded. Next, drag the file you downloaded into the File Formats folder.

If you're using Photoshop Elements, double-click the Photoshop Elements folder, the Plug-Ins folder, and the File Formats folder. Drag the CameraRaw.8bi file from the File Formats folder to any location other than the Desktop. Finally, drag the file you downloaded from the Desktop to the File Formats folder.

www.adobe.com/support/downloads

FIX OF THE MONTH

Update For Windows XP (KB928388)

Problem: Due to changes in the observance of daylight-saving time in 2007, systems may not display the correct time in 2007.

Resolution: Download a 503KB update that will let Windows XP automatically change the time in observance of daylight-saving time on the proper day. Go to www.microsoft.com/downloads and type **KB928388** in the Search field and click Go. From the resulting list of search results, click Update For Windows XP (KB928388). Click the Download button in the upper-left corner of the Quick Details box to begin downloading the file WindowsXP-KB928388-x86-ENU.exe. When prompted, click Save to download the file to your hard drive. After the download is complete, locate the file and double-click it to launch the installer. Follow the instructions on the screen to finish installing the update.

www.microsoft.com/downloads

Q&A

Hardware

Q How can I best handle wireless network encryption at our beach house? It has one Linksys Wi-Fi router fed by a cable modem, which serves one half of the house. I also have a Linksys repeater that serves the other half of the house. Somehow, the Wi-Fi router got set up to broadcast two different wireless signals, so I can now access either signal with my computer. Both signals are presently set up with no security at all. That makes it easy for the renters, who change each week during the summer, to use the Internet without having to use any access code. But when my family is in the beach house, I would like to have more network security, such as using WPA (Wi-Fi Protected Access) encryption, or at least WEP (Wireless Equivalency Privacy) encryption. How can I achieve both goals?

A Our recommendation with any wireless network is to always use the most robust encryption possible. There are several reasons for this. The first is the increasing view of the legal community toward liability if your network is used by others for malicious purposes. If you've failed to take what are considered normal precautions to restrict access to your network, you may be held partially liable if someone uses your open wireless connection to hack into a network.

Also, providing a secure wireless network is something that renters may start to expect in the future. You could market this as a special service—something that may make your rental customers feel more comfortable at your beach house.

Finally, we recommend using WPA as the encryption method of choice. It currently is the safest way to protect both access to your wireless network and the traffic that traverses your network. Your Linksys router and repeater may not support WPA, and if so, you'll need to rely upon WEP encryption to restrict access to your network. Beware, though, that WEP is easily circumvented by modestly savvy intruders and shouldn't be used as a long-term means of protecting your network.

Multimedia

Q While visiting several Web sites that require Adobe Flash, I get the following message: "Hello, you either have JavaScript turned off or an old version of Macromedia's Flash Player." I have downloaded and installed the latest Flash Player many times. I receive a message that says Flash Player was successfully installed, but I am never able to access the sites that use Flash. I've uninstalled and reinstalled. Do you have any suggestions as to why this is happening and how to correct it?

A Flash is a wonderful method of adding functionality to a Web site that can't normally be delivered with regular HTML (Hypertext Markup Language). Unfortunately, successfully viewing Web sites that use Flash can be difficult at times.

First, make sure that your current Flash installation works by visiting www.adobe .com/products/flash/about. This is the test site for Adobe's Flash Player. If you have a working installation of Flash Player, you'll see an animated Adobe Flash Player Is Installed message with the version number below the text. If you don't see this announcement, you'll want to uninstall any existing versions of Flash Player, restart your computer, and then install the latest version from Adobe's Web site (www.adobe.com).

If Adobe's test Web site indicates that your Flash Player is installed and functioning

properly, the problem lies with the Web sites that are giving you this error. Many Web sites use a detection script to determine the version of Flash Player you have installed, and it's possible that these sites are using scripts that have bugs in them. You can try to contact the Web site owner, and depending on the amount of attention given to the site, he may be able to fix the site promptly.

Windows

Q I have an HP Media Center Photosmart PC m7067c running Windows XP Media Center Edition. Recently while in Windows Explorer, I've noticed a folder that I don't recall seeing before. The folder has only one text file in it. I am suspicious that it might be spyware. The folder is named a52b10de99edee246f99859a751a, and the file is named Msxml4-KB927978-enu.log. Can I safely remove them?

A According to our research, this file is a leftover from running Windows Update. Normally, Windows Update creates this temporary folder and file during the update process, and when the update is complete, it deletes both the folder and its contents. For some reason, Windows Update failed to delete these items, leaving them orphaned. Running Windows Update again won't remove the folder and file because each is a unique creation. You should be able to delete both items without any consequences to your computer.

Multimedia

Q Where can I find out all about the different kinds of DVDs (R, RW, 2X, 4X, etc.)? There are so many kinds out there, and I am not too sure which to buy for my project of transferring home VCR videos to my computer via Dazzle. None of the software explains all I would like to know about the different types of DVDs.

A The array of available DVDs and DVD drives is a veritable vegetable soup. Fortunately, market forces have led to a consolidation of drive and disc types over the last few years. Almost all DVDs can store 4.7GB of data, although larger capacities are becoming more affordable.

Before undertaking your video transfer project, you'll want to determine the type of DVD burner you currently have. If you have the manuals that came with the drive, you should be able to determine which disc formats it supports. If you don't have the manuals, you can simply right-click the drive icon in Windows Explorer and select Properties. This will display the make and model of the drive. You'll then need to visit the manufacturer's Web site to determine the extent of the drive's capabilities.

As you've discovered, DVDs come in many flavors that can be confusing at first glance. The trick is to break down the code into discrete pieces. A DVD is typically labeled "DVD-xxx" where "xxx" is either an R (recordable) or RW (rewriteable). You can only write information to a DVD-R disc once. DVD-RW means that you can reuse the disc by simply copying over the existing contents, avoiding any unnecessary expense.

Both of these disc formats use the minus (-) sign to denote the format. There are also competing formats (DVD+R, DVD+RW) that have similar capabilities, though their technical implementations are very different. Fortunately, most recent DVD burners are hybrid drives that can support multiple formats. For most users, there's no significant advantage to either format.

The most current DVD format is DVD±R DL (dual-layer) discs. These discs use multiple layers to effectively double the storage capacity of the discs. Dual-layer discs are currently more expensive than single-layer discs but are more cost-effective when the added capacity is considered.

In addition to DVD formats, your DVD drive also has a speed element that governs

how fast you can burn a DVD. This is usually denoted with a 1X, 2X, 4X, etc. The fastest DVD burners we've used are 16X. The faster the burner, the better; but in your case, your computer's processor speed may have a greater impact, as it has to digitize your old VCR tapes.

If your existing DVD drive is slow and doesn't support multiple DVD formats, we recommend replacing it with a more modern drive. Reputable DVD±RW dual-layer drives are available for under $50 and are fairly easy to install into your computer. Some popular brands to look for are Pioneer (www.pioneer electronics.com), Plextor (www.plextor.com), and Teac (www.teac.com). Using a fast, modern drive will make your project progress quickly and efficiently.

Hardware

Q I have an Intel P4 Dell 4700 that has 512MB of RAM operating with no problems. I wanted to upgrade, so I searched the Internet. I reviewed the specs and ordered a pair of 1GB Dell Dimension 3100 PC2-3200 non-ECC (Error-Correcting Code) DDR2-400 DIMMs (dual in-line memory modules) from Memory Ten. I shut the machine down, unplugged it, and waited a few minutes to allow the motherboard to power down. I grounded myself to make sure I was static-free. I then opened the case and popped out each 256MB DIMM carefully and replaced them with the 1GB DIMMs, carefully snapping them in. As soon as the plug hit the power supply, the system tried to start. There was no video, no signal. Nothing. The BIOS (Basic Input/Output System) screen does not come up. I reinstalled the 512MB sticks, and my computer works like a champ. So now I have all this memory and can't get it to work. Now that I have opened the DIMMs, I doubt that I can return them. What are my options, and what do you suggest?

A From your description, we can't find any fault in the excellent job you did of safely installing the new memory into your Dell. Because you mentioned that your Dell works properly with the old memory, it's clear to us that the problem lies with the new memory. The DIMMS might have slipped through the quality control checks used by the vendor to catch defective memory, or they might have been damaged in shipping.

Regardless of the cause, we recommend that you contact Memory Ten (www.mem oryx.net) and request replacement DIMMS. Memory Ten should be willing to replace the defective DIMMS. We recommend calling the company at its toll-free number: (866) 636-6799. If Memory Ten fails to replace the DIMMS or refund your money, you can also contact your credit card merchant. Most credit card companies will help you reverse charges for damaged or defective merchandise you purchase with a credit card.

Utilities

Q After I erased all the images on my CF (Compact Flash) card, I realized I had not transferred several pictures to my computer. I did not reformat the card, nor have I taken any pictures since I erased the images. Can you help me get them back?

A The good news is that you haven't formatted the card or written to it since you deleted the pictures. That means they should still be there. When Windows (and DOS before it) deletes a file, it doesn't erase the whole file unless you use a program specifically made for the purpose of destroying files beyond recovery for security purposes. Otherwise, the operating system merely changes the first letter of the file's name to the lower case sigma character—thereby telling itself not to display the file name—and it designates the portion of its file allocation system (FAT, FAT32, NTFS) occupied by that file as available for reuse.

If you delete a file on your hard drive, and if you haven't told Windows not to put deleted files in the Recycle Bin, they're still

To recover files accidentally deleted from a floppy diskette or flash card, you'll need a utility application to do the task.

available for you to recover until such time as the amount of space you have delegated to the Recycle Bin is full or your hard drive is full, at which point the first file that was placed in the Recycle Bin becomes the first file discarded to make room for something newer.

Normally, there is a Recycle Bin allocated to each partition on each hard drive you have. However, there is no Recycle Bin allocated to removable media. To recover files accidentally deleted from a floppy diskette or flash card, you'll need a utility application to do the task. Fortunately, that's not hard to do; undelete utilities have been around almost as long as there have been files that could be accidentally deleted. Go to your Internet search engine of choice and type **undelete freeware** for a long list of choices.

There are just a few conditions required for the undelete utilities to work: You have to be able to address your CF card, whether it's still in the camera or in a separate reader,

as though it was just another removable drive. The operating system that created the disk's magnetic structure must have used a file allocation system recognizable by the utility program. In other words, the CF card must have been formatted using a 16-bit file allocation table (FAT or FAT16 used by DOS, Windows 3.x, and Windows 95), a 32-bit file allocation table (FAT32 used by Windows 98/98SE/Me and newer), or the NTFS (NT File System) employed by Windows 2000/XP/Vista. The system used to delete the files is the same as the system used by Windows (change the first character of the file name and then simply mark the portion of the disk used by the file as available).

If all three of these conditions exist, you should be able to recover your files. If all of the deletions were done using the camera from which the CF card came, check with the camera manufacturer to see if the company has its own undelete utility.

Hardware

Q I have a Compaq/Presario computer running Windows XP. I placed a disc in the CD slot, closed the door, and the computer went crazy—and I didn't even click anything. I immediately removed the disc. This disc was to install the Microsoft Works Suite 2005, because the program that came with my computer would not open. For some reason it would not accept my Certificate of Authenticity number.

I turned the computer off. When I restarted it, the mess was gone. However, I received the error message, "This application failed to initialize properly (Oxc0000135). Click on OK to terminate the application." When I clicked OK, the message went away, but every time I reboot the computer, the message reappears with a loud noise.

Another question: I am continually receiving a pop-up message asking me if I want to install and run Adobe Flash Player 9. I click No, but it continually shows up on the screen. Any help you can give me will be sincerely appreciated.

A If your computer is still within its warranty period, the problems you're having with the Works Suite and the CD drive are warranty issues. Even if the computer has passed the warranty—or if you bought it secondhand—it still wouldn't hurt to contact the vendor for some help.

But, while we can't help you with the Works authenticity number, Microsoft might. You can try contacting Microsoft; it may be very interested in your problem, particularly if the software was pirated by the vendor.

About your question regarding Flash 9: A relatively short while ago, Adobe acquired Macromedia and thereby also acquired Flash and Shockwave, two popular Internet browser plug-ins. When you visit Web sites that offer content created in either Flash or Shockwave and the version of Flash and/or Shockwave used to create the content is newer than the one you have already installed on your system, you'll be prompted to upgrade. To our knowledge there's no way to stop the prompting except to go ahead and do the (normally) free update.

Frequently **A**sked **Q**uestions

Answers to users' most common questions about **Print Servers**

When choosing a print server, confirm that the printers' ports are compatible with the ports on your print server. For example, most modern printers use the USB interface, so be sure that the print server offers enough USB ports to support the printers that you plan to attach.

FAQ How can I share a printer without sharing my PC? What if I have multiple printers that I want to share?

If you have a single printer connected to your PC, it's possible to share that printer with other PC users on your home or small office LAN (local-area network) by enabling printer sharing on your system and allowing other users to access the printer through your PC. The problem with this approach is that printer data from other users can congest your Ethernet port, slowing down or interrupting your own network communication. The solution is to disconnect the printer from your PC and attach it instead to a network adapter called a print server. Most major network product manufacturers such as Linksys, Netgear, D-Link, Buffalo Technologies, and others offer a variety of print server devices.

The print server basically converts your conventional printer into a network-ready device that has its own IP (Internet Protocol) address and name. Consequently, all of the network users can take advantage of the networked printer. This also allows you to centralize the printer in a common location in the home or office—usually near a switch port on your broadband router. You'll no longer be bothered by family members or co-workers marching through to collect their printing. If you have multiple printers that need to be shared (such as a laser printer and color photo printer), you can employ a print server that supports two, three, or even four printers.

FAQ When I share a printer through a print server, do I have to leave the printer or PC on all the time? What should I consider when shopping for a print server?

Sharing a printer through a PC requires you to leave that PC on and connected to the network at all times. Even putting the PC into Standby mode could cut off access to the local printer for other network users. However, when you use a print server, only the print server and the printer(s) must remain powered on. Fortunately, the print server uses relatively little power, and most modern printers provide power conservation features that allow them to enter a standby mode after brief periods of inactivity. This reduces electricity costs and unnecessary wear on the electronics.

When choosing a print server, confirm that the printers' ports are compatible with the ports on your print server. For example, most modern printers use the USB interface, so be sure that the print server offers enough USB ports to support the printers that you plan to attach. If you're using a printer with a conventional Centronics-type parallel port connector, the print server should offer a corresponding port. If you are using both Centronics- and USB-type printers (or want to be able to upgrade the Centronics printer to a USB model later), select a print server with mixed ports.

FAQ How can I share printers when I don't have a network connection handy? I don't want to run more cables.

In this case, select a wireless print server that simply attaches directly to the printer's Centronics or USB port. The printer then becomes a wireless device on your network using 802.11a or 802.11g wireless standards and will communicate with your wireless router or wireless access point. Again, major network vendors typically have several wireless print server models to choose from—just be sure to select a wireless device that is compatible with your printer's Centronics or USB port.

Unlike wired print servers that can consolidate several printers into one box, wireless print servers are often single-port devices that only work with one printer. You may need to buy a wireless print server for each printer that you need to share. There are some exceptions, such as the Linksys WPS54GU2 ($99.99; www.linksys.com), which can connect a USB and parallel printer into the same wireless print server adapter. ▐▌

ACTION EDITOR

Customer Service Faux Pas

Forty days after I purchased a ViewSonic Q9 19-inch monitor, it stopped working. When I contacted ViewSonic to order a replacement, I was told that ViewSonic would ship a new monitor within 48 hours and that ViewSonic would pay for shipping. I received the monitor, but it was a refurbished model. Also, there was no return label. I called ViewSonic and asked for an explanation but was told a supervisor would call me back. Two days passed and there was no call, so I paid $33 to ship the monitor back. Five days later, I called and talked to a supervisor who again was unable to explain why there was no shipping label. Later, I got an email from ViewSonic stating that it would be unable to reimburse me for shipping.

Mike D.
Cincinnati, Ohio

We contacted our ViewSonic representative, who immediately responded that he would look into the situation. Several emails, a couple phone calls, and approximately three weeks later, Mike got an email from ViewSonic that said he would receive a check to cover the shipping costs. ViewSonic's representative also called us to clarify the issue. The monitor Mike purchased comes with a 30-day replacement warranty. Even though Mike was 10 days past the warranty expiration, ViewSonic made an exception and sent him a refurbished model. Because the monitor failure occurred after the warranty expired, ViewSonic's policy states that customers are responsible for shipping costs. Because ViewSonic's representative was the source of the confusion, it opted to refund Mike's money.

In your July 2006 issue, I read a review for the backup and archiving utility ShadowBack and decided to purchase it. When I tried to download and purchase the software from the Web site, I was unable to make it work. I have attempted to contact Warm And Fuzzy Logic, the company that manufactures for ShadowBack, but the toll-free phone number you provided is incorrect.

Tom Nettling
Tucson, Ariz.

We started by calling the toll-free phone number we ran, and it connected to a janitorial services company. We emailed the company's support line and got a response almost immediately. A representative from Warm And Fuzzy Logic contacted Tom, and although she was unable to assist him in downloading the product, she agreed to send an installation CD. When Tom got the CD, it lacked an authorization key, but another email resolved that. Despite the rather rocky process, Tom is pleased with how it works. We also contacted Warm And Fuzzy Logic to inquire about the toll-free phone number. The representative informed us that the company is no longer offering toll-free phone support, and the toll-free number we published in July has since been disconnected. Instead, all support and sales inquiries should go through the Web site. The representative did offer a toll number, (562) 438-2109, for customers who prefer to speak to a live representative.

I had a problem with my HP Pavilion PC, and I have a service contract that is good through October 2007. When I called HP to get the computer fixed, however, HP told me that it didn't have my contract on file. I called HP repeatedly and got the same story each time.

Mary Briggs
Naples, Fla.

Mary sent us a copy of her Extended Service Plan Agreement receipt, and everything looked legit, so we called our HP rep. A couple days later, Mary sent us an email saying that HP had contacted her to inform her that it had uncovered her missing warranty and was well on its way toward completing the service request. ∎

Man Bites Dog

Keeping up on the news is tough. Who has time to read the paper each morning? Who wants to be tied to the TV talking heads every night? Plus, I need more than just "news" headlines. Getting *The New York Times*, BBC, and NPR headlines are great, but I need gadget updates from Gizmodo (www.gizmodo.com), too. I want to know what's going on with the Phillies, even in the off-season. And I absolutely must have the latest gossip from Wonkette (www.wonkette.com). For years, I struggled to find online tools combining convenience and customization. I think I've finally found an answer.

First, my online news source needs to be something that's already part of my routine. You know—out of sight, out of mind and all that. Remembering to visit CNN and E*Trade regularly just isn't going to happen. I've tried RSS (Really Simple Syndication) readers, and they're great if you're diligent about checking them. But even the products built into browsers or email clients were too out of the way for me. You might be different (or more responsible about avoiding distraction at work) and prefer to set aside a separate place, in which case an RSS reader works perfectly. I need my news to slap me in the face just to remind me it's there.

What do I do more regularly than open my browser? Pathetic as it may seem, I probably don't do anything (other than breathe in and out) more often throughout the day than open a new browser window. A Web portal should be the answer, so I tried them all: Yahoo!, MSN, even iWon (and no, I never did). The problem was that all those portals, even when you choose which "modules" to include, only include the information the company makes available, along with a hefty dose of advertising and promotional content. If I knew of a great site putting out daily updates on model trains (I don't, but if I did . . .), there was no way to include it next to the weather report.

Finally, I tried the only other program I use more often than my browser: Outlook. I signed up for email subscriptions to all the news sources I wanted. But not everyone offers email updates, and missing a day or two completely overwhelmed my inbox. Subscribing to newsletters also happens to be a great way to get your address out there and network with Nigerian businessmen, Ukrainian pill pushers, and "sexy singles." No thanks.

Then I stumbled upon Google IG. What does the IG stand for? I wish I knew—maybe you can tell me. But whatever it means, it works like a charm. Just direct your browser to www.google.com/ig. Select Sign In and then click the link to create a Google Account (unless you already have one for Gmail or Google Alerts). Sign up with an email address and a password and then make Google IG your home page. When you launch your browser, you'll start with Google's Personalized Homepage. Click Add Stuff to browse through thousands of modules. Or just search for the news you want. Google has them all. If you discover a site with a news feed not included in Google directory, just click Add URL and paste the URL in.

Then, on your home page, drag and drop each module to where you want it. Edit each module with the link at the top right to determine how many items to show. Remove, collapse, or expand a module with a single click. Best of all, everything you want to keep tabs on (and nothing you don't) is right there whenever the browser opens. And if you go away for a few days, there's not a pile of mail waiting when you return. It's the best of all worlds.

Different tools work differently for everyone, and you might have a perfect system. If so, stick with it. But if you're struggling like I was, try Google's Personalized Homepage. The strange IG mystery aside, the site is dead simple to set up and incredibly handy to have around. Now that's news. ▌▌

BY GREGORY ANDERSON

Gregory Anderson *is a regular contributor to* Smart Computing *and several other technology publications. He keeps a sharp eye (with the help of thick glasses) on computing trends and enjoys working with geeks of all stripes—most of the time. Reach Greg with all the news that's fit to print at* **gregory-anderson@smartcomputing.com**.

The Early Bird Gets The Worm— And Who Wants A Worm?

Isn't it great that we can rely on new technologies to work, first time every time, when we bring them home? Yep, it's such a nice feeling knowing that, right out of the box, any new device or software we get our hands on can be counted on to get the job done with a minimum of fuss and bother, with no glitches or problems, and with only a moment's setup time. Why, we just plunk our money down for the latest software or hardware widget, take it home, follow the easy-to-understand directions, and a few minutes later, it's up and running and . . . What? This doesn't happen for you?! You poor sap!

Well, it doesn't happen for me, either. In fact, at least half the time I pick up some new gadget or software, there turns out to be a problem: Either I can't get it installed or, once installed, it fails to work. If it does work, it turns out that it doesn't really do the job I had in mind for it. Worst of all are the times that I get it installed and running perfectly, only to discover that it causes some *other* piece of software or hardware to stop working. Arrrgh!

But it's always been this way. New technology—poorly tested and almost always rushed to market—often fails. And this is true no matter how far back we choose to look.

Take, for example, Lewis and Clark's famed exploration of the great American West. Planning to take roughly two years to traverse the country (they ended up taking somewhat longer), the two co-captains (technically Clark was a lieutenant, but Lewis willingly shared his command with his old friend) spent a fair amount of money on a fascinating and diverse assortment of equipment and supplies, including lead, tobacco, "portable soup," whiskey, fishing tackle, "Creyons," three bushels of salt, and a frighteningly large collection of very harsh purgatives.

Among the many items the two men purchased for the trip were several examples of new technologies. One was an air gun made by Isaiah Lukens of Philadelphia, Penn. This rifle, when fully charged, held air pressurized at over 700 pounds per square inch and was capable of firing a .31 caliber bullet with roughly the same force as a Kentucky rifle. It impressed the heck out of the Indians, because it was almost silent, did not belch smoke, and needed no powder. Imagining the Indians' reaction to this device brings to mind Arthur C. Clarke's famous dictum: "Any sufficiently advanced technology is indistinguishable from magic."

The rifle actually worked well enough, except that it was prone to firing unexpectedly. Thus, a young woman standing nearby during a predeparture demonstration was accidentally shot in the head. (Lewis calmly pronounced her wound, "by no means mortal." Then again, we're talking about a man who believed in harsh purgatives as a remedy for just about every ailment. One hopes the woman did not allow Captain Lewis to treat her.)

Another interesting piece of new technology that Lewis bought was a clock made by a Philadelphia watchmaker named Thomas Parker. At $250, the clock was by far the most expensive single item purchased for the trip. (In 1803, the cost of this one clock was equivalent to a typical worker's yearly wage several times over.)

The clock was important because the group's mission hinged largely on Lewis and Clark being able to determine their exact location so that they could produce accurate maps of the country across which they journeyed. As any sailor knows, it's difficult to determine one's longitude without an accurate chronometer, so the new Parker clock, guaranteed to be accurate, reliable, and able to withstand the rigors of travel, was crucial to the mission.

Naturally, it didn't work.

In addition, Lewis and Thomas Jefferson spent many months designing and building an iron-framed boat to be covered with animal skins when navigating rivers and which, with the skins removed, was meant to be easy to carry during a portage. The boat (to which the men serving under Lewis and Clark referred derisively as "The Experiment") was to be the salvation of the travelers.

The boat didn't work, either.

In fact, as most of us know by now, the first versions of *anything* don't usually work very well, which is why so many *Smart Computing* readers (and editors) live by the wise words of an anonymous engineer: "Never buy the first version of anything."

This message has been brought to you by the initial release of Windows Vista. ▮▮

BY ROD SCHER

Rod Scher *is a former software developer and a recovering English teacher. He's also the publication editor of* Smart Computing *and will no doubt continue in that position until such time as his boss reads this column. Contact Rod at* **rod-scher@smartcomputing.com.**

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